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FIRST LINES
OF THE
PRACTICE OF PHYSIC.

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FIRST LINES
OF THE
PRACTICE OF PHYSIC.

PART I. BOOK II.

CHAP. XII.

OF THE RHEUMATISM.

CCCCXXXIII.

OF this disease there are two species,
the one named the Acute, the other
the Chronic rheumatism.

VOL. II.

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CCCCXXXIV.

CCCCXXXIV.

It is the Acute Rheumatism which especially belongs to this place, as from its causes, symptoms, and methods of cure, it will appear to be a species of phlegmasia or inflammation.

CCCCXXXV.

This disease is frequent in cold, and more uncommon in warm, climates. It appears most frequently in autumn and spring, less frequently in winter when the cold is considerable and constant, and very seldom during the heat of summer. It may occur, however, at any season, if vicissitudes of heat and cold be for the time frequent.

CCCCXXXVI.

The acute rheumatism generally arises
from

from the application of cold to the body when any way unufually warm; or when one part of the body is expofed to cold whilst the other parts are kept warm; or laftly, when the application of the cold is long continued, as it is when wet or moist clothes are applied to any part of the body.

CCCCXXXVII.

These caufes may affect perfons of all ages; but the rheumatifm feldom appears in either very young or in elderly perfons, and moft commonly occurs from the age of puberty to that of thirty-five years.

CCCCXXXVIII.

These caufes (CCCCXXXVI.) may alfo affect perfons of any conftitution; but they moft commonly affect thofe of a fan-
guine temperament.

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B 2

CCCCXXXIX.

CCCCXXXIX.

This disease is particularly distinguished by pains affecting the joints, for the most part the joints alone, but sometimes affecting also the muscular parts. Very often the pains shoot along the course of the muscles, from one joint to another, and are always much increased by the action of the muscles belonging to the joint or joints affected.

CCCCXL.

The larger joints are most frequently affected; such as the hip-joint, and knees of the lower, and the shoulders and elbows of the upper, extremities. The ankles and wrists are also frequently affected; but the smaller joints, such as those of the toes or fingers, seldom suffer.

CCCCXLI.

CCCCXLI.

This disease, although sometimes confined to one part of the body only, yet very often affects many parts of it; and then it comes on with a cold stage, which is immediately succeeded by the other symptoms of pyrexia, and particularly by a frequent, full, and hard pulse. Sometimes the pyrexia is formed before any pains are perceived; but more commonly pains are felt in particular parts, before any symptoms of pyrexia appear.

CCCCXLII.

When no pyrexia is present, the pain is sometimes confined to one joint only; but, when any considerable pyrexia is present, although the pain may be chiefly in one joint, yet it seldom happens but that the pains affect several joints often at the very

same time, but for the most part shifting their place, and, having abated in one joint, become more violent in another. They do not commonly remain long in the same joint, but frequently shift from one to another, and sometimes return to joints formerly affected; and in this manner the disease often continues for a long time.

CCCCXLIII.

The pyrexia attending this disease has an exacerbation every evening, and is most considerable during the night, when the pains also become more violent; and it is at the same time that the pains shift their place from one joint to another. The pains seem to be also increased during the night, by the body being covered more closely, and kept warmer.

CCCCXLIV.

CCCCXLIV.

A joint, after having been for some time affected with pain, commonly becomes affected also with some redness and swelling, which is painful to the touch. It seldom happens, that a swelling coming on does not alleviate the pain of the joint; but the swelling does not always take off the pain entirely, nor secure the joint against a return of it.

CCCCXLV.

This disease is commonly attended with some sweating, which occurs early in the course of the disease; but it is seldom free or copious, and seldom either relieves the pains or proves critical.

CCCCXLVI.

In the course this disease the urine is high coloured, and in the beginning without sediment; but as the disease advances, and the pyrexia has more considerable remissions, the urine deposits a lateritious sediment. This, however, does not prove entirely critical; for the disease often continues long after such a sediment has appeared in the urine.

CCCCXLVII.

When blood is drawn in this disease, it always exhibits the appearance mentioned CCXXXVII.

CCCCXLVIII.

The acute rheumatism, though it has so much of the nature of the other phlegmasiæ,

masiæ, differs from all those hitherto mentioned, in this, that it is not apt to terminate in suppuration. This almost never happens in rheumatism; but the disease sometimes produces effusions of a transparent gelatinous fluid into the sheaths of the tendons. If we may be allowed to suppose that such effusions are frequent, it must also happen, that the effused fluid is commonly reabsorbed; for it has seldom happened, and never indeed to my observation, that considerable or permanent tumours have been produced, or such as required to be opened, and to have the contained fluid evacuated. Such tumours, however, have occurred to others, and the opening made in them has produced ulcers difficult to heal. Vide Storck. Ann. Med. II.

CCCCXLIX.

With the circumstances mentioned from CCCCXXIX. to CCCCXLVIII. the disease often continues for several weeks. It seldom, however, proves fatal; and it rarely happens that the pyrexia continues to be considerable for more than two or three weeks. While the pyrexia abates in its violence, if the pains of the joints continue, they are less violent, more limited in their place, being confined commonly to one or a few joints only, and are less ready to change their place.

CCCCCL.

When the pyrexia attending rheumatism has entirely ceased; when the swelling, and particularly the redness of the joints, are entirely gone; but when pains still continue to affect certain joints, which

which remain stiff, which feel uneasy upon motion, or upon changes of weather, the disease is named the Chronic Rheumatism, as it very often continues for a long time. As the chronic is commonly the sequel of the acute rheumatism, I think it proper to treat of the former also in this place.

CCCCLI.

The limits between the acute and chronic rheumatism are not always exactly marked.

When the pains are still ready to shift their place; when they are especially severe in the night-time; when, at the same time, they are attended with some degree of pyrexia, and with some swelling, and especially with some redness of the joints; the disease is to be considered as still partaking the nature of the acute rheumatism.

But,

But, when there is no degree of pyrexia remaining; when the pained joints are without redness; when they are cold and stiff; when they cannot easily be made to sweat; or when, while a free and warm sweat is brought out on the rest of the body, it is only clammy and cold on the pained joints; and when, especially, the pains of these joints are increased by cold, and relieved by heat applied to them; the case is to be considered as that of a purely chronic rheumatism.

CCCCCLII.

The chronic rheumatism may affect different joints; but is especially ready to affect those joints which are surrounded with many muscles, and those of which the muscles are employed in the most constant and vigorous exertions. Such is the case of the vertebræ of the loins, the affection

fection of which is named Lumbago; or that of the hip-joint, when the disease is named Ischias, or Sciatica.

CCCCCLIII.

Violent strains and spasms occurring on sudden and somewhat violent exertions, bring on rheumatic affections, which at first partake of the acute, but very soon change into the nature of the chronic rheumatism.

CCCCCLIV.

I have thus delivered the history of rheumatism; and suppose, that, from what has been said, the remote causes, the diagnosis, and prognosis of the disease, may be understood. The distinction of the rheumatic pains from those resembling them, which occur in the syphilis and scurvy, will

will be obvious, either from the seat of those pains, or from the concomitant symptoms peculiar to these diseases. The distinction of rheumatism from gout will be more fully understood from what is to be delivered in the following chapter.

CCCCLV.

With respect to the proximate cause of rheumatism, there have been various opinions. It has been imputed to a peculiar acrimony; of which, however, in ordinary cases, I can find no evidence; and, from the consideration of the remote causes, the symptoms, and cure of the disease, I think the supposition very improbable.

The cause of an *Ischias Nervosa* assigned by COTUNNIUS, appears to me hypothetical, and is not supported by either the phenomena or method of cure. That, however,

however, a disease of a rheumatic nature may be occasioned by an acrid matter applied to the nerves, is evident from the toothach, a rheumatic affection generally arising from a carious tooth.

That pains resembling those of rheumatism, may arise from deep-seated suppurations, we know from some cases depending on such a cause, and which, in their symptoms, resemble the lumbago or ischias. I believe, however, that, by a proper attention, these cases depending on suppuration, may be commonly distinguished from the genuine cases of lumbago and ischias; and, from what is said in CCCCXLVIII. I judge it to be at least improbable, that a genuine lumbago or ischias does ever end in suppuration.

CCCCCLVI.

The proximate cause of rheumatism
has

has been by many supposed to be a lentor of the fluids obstructing the vessels of the part; but the same consideration as in CCXLI. 1, 2, 3, 4, and 5, will apply equally here for rejecting the supposition of a lentor.

CCCCLVII.

While I cannot, therefore, find either evidence or reason for supposing that the rheumatism depends upon any change in the state of the fluids, I must conclude that the proximate cause of acute rheumatism, is commonly the same with that of other inflammations not depending upon a direct stimulus.

CCCCLVIII.

In the case of rheumatism I suppose, that the most common remote cause of it,
 2 that

that is, cold applied, operates especially on the vessels of the joints, from these being less covered by a cellular texture than those of the intermediate parts of the limbs. I suppose further, that the application of cold produces a constriction of the extreme vessels on the surface, and at the same time an increase of tone or phlogistic diathesis in the course of them, from which arises an increased impetus of the blood, and, at the same time, a resistance to the free passage of it, and consequently inflammation and pain. Further, I suppose, that the resistance formed excites the vis medicatrix to a further increase of the impetus of the blood; and, to support this, a cold stage arises, a spasm is formed, and a pyrexia and phlogistic diathesis are produced in the whole system.

CCCCLIX.

According to this explanation, the cause of acute rheumatism appears to be exactly analogous to that of the inflammations depending on an increased afflux of blood to a part while it is exposed to the action of cold.

But there seems to be also, in the case of rheumatism, a peculiar affection of the fibres of the muscles. These fibres seem to be under some degree of rigidity, and therefore less easily admit of motion; and are pained upon the exertions of it.

It is also an affection of these fibres which gives an opportunity to the propagation of pains from one joint to another, along the course of the muscles; and which pains are more severely felt in the extremities of the muscles terminating in the joints, because, beyond these, the oscillations are not propagated.

This

This affection of the muscular fibres attending rheumatism, seems to explain why strains and spasms produce rheumatic affections; and, upon the whole, shows, that, with an inflammatory affection of the sanguiferous system, there is also in rheumatism a peculiar affection of the muscular fibres, which has a considerable share in producing the phenomena of the disease.

CCCCLX.

Having thus given my opinion of the proximate cause of rheumatism, I proceed to treat of the cure.

CCCCLXI.

Whatever difficulty may occur with respect to the explanation given (CCCCLVIII. and CCCCLIX.) this remains certain, that

in acute rheumatism, at least in all those cases which do not arise from direct stimuli, there is an inflammatory affection of the parts, and a phlogistic diathesis in the whole system; and upon these is founded the method of cure, which frequent experience has approved of.

CCCCCLXII.

The cure therefore requires, in the first place, an antiphlogistic regimen, and particularly a total abstinence from animal food, and from all fermented or spirituous liquors; substituting a vegetable or milk diet, and the plentiful use of bland diluent drinks.

CCCCCLXIII.

Upon the same principle (CCCCCL.) at least with perhaps the same exception as
above

above, blood-letting is the chief remedy of acute rheumatism. The blood ought to be drawn in large quantity, and the bleeding is to be repeated in proportion to the frequency, fullness, and hardness of the pulse, and to the violence of the pain. For the most part, large and repeated bleedings, during the first days of the disease, seem to be necessary, and accordingly have been very much employed; but to this some bounds are to be set; for very profuse bleedings occasion a slow recovery and, if not absolutely effectual, are ready to produce a chronic rheumatism.

CCCCLXIV.

To avoid that debility of the system, which general bleedings are ready to occasion, the urgent symptom of pain may be often relieved by topical bleedings, and, especially when any swelling and redness

have come upon a joint; the pain of it may be very certainly relieved by such bleedings ; but, as the continuance of the disease seems to depend more upon the phlogistic diathesis of the whole system, than upon the affection of particular parts, so topical bleedings will not always supply the place of the general bleedings proposed above,

CCCCLXV.

To take off the phlogistic diathesis prevailing in this disease, purging may be useful, if procured by medicines which do not stimulate the whole system, such as the neutral salts, and which have, in some measure, a refrigerant power. Purging, however, is not so powerful as bleeding, in removing phlogistic diathesis ; and, when the disease has become general and violent, frequent stools

Tools are inconvenient, and even hurtful, by the motion and pain which they occasion.

CCCCLXVI.

In acute rheumatism, applications to the pained parts are of little service. Fomentations, in the beginning of the disease, rather aggravate than relieve the pains. The rubefacients and camphire are more effectual in relieving the pains ; but generally they only shift the pain from one part into another, and do little towards the cure of the general affection. Blistering, applied to the pained part, may also be very effectual in removing the pain from it ; but will be of little use, except where the pains are much confined to one part.

CCCCLXVII.

The several remedies mentioned from

C 4

(CCCCLI.

(CCCCLI. to CCCCLV.) moderate the violence of the disease, and sometimes remove it entirely; but they sometimes fail in this, and leave the cure imperfect. The attempting a cure by large and repeated bleedings, is attended with many inconveniences, (see CXL.) ; and the most effectual and safe method of curing this disease, is after some general bleedings for taking off, or at least diminishing the phlogistic diathesis to employ sweating, conducted by the rules laid down CLXVIII. and CLXIX.

CCCCLXVIII.

Opiates, except where they are directed to procure sweat, always prove hurtful in every stage of this disease.

CCCCLXIX.

The Peruvian bark has been supposed a
remedy

remedy in some cases of this disease; but we have seldom found it useful, and, in some cases, hurtful. It appears to me to be fit in those cases only, in which the phlogistic diathesis is already much abated, and where, at the same time, the exacerbations of the disease are manifestly periodical, with considerable remissions interposed.

CCCCLXX.

Calomel, and some other preparations of mercury, have been recommended in the acute rheumatism; but I believe they are useful only in cases of the chronic kind, or at least in cases approaching to the nature of these.

CCCCLXXI.

Having now treated fully of the cure of
the

the acute rheumatism, I proceed to treat of the cure of the chronic, which is so frequently a sequel of the former.

CCCCLXXII.

The phenomena of the purely chronic rheumatism, mentioned in CCCCXXXIX. and CCCCXL. lead me to conclude, that its proximate cause is an atony, both of the blood-vessels and of the muscular fibres of the part affected, together with a degree of rigidity, and contraction in the latter, such as frequently attend them in a state of atony.

CCCCLXXIII.

Upon this view of the proximate cause, the general indication of cure must be to restore the activity and vigour of the vital principle in the part; and the remedies
for

for this disease, which experience has approved of, are chiefly such as are manifestly suited to the indication proposed.

CCCCLXXIV.

These remedies are either external or internal.

The external are the supporting the heat of the part, by keeping it constantly covered with flannel; the increasing the heat of the part by external heat, applied either in a dry or in a humid form; the diligent use of the flesh-brush, or other means of friction; the application of electricity in sparks or shocks; the application of cold water by affusion or immersion; the application of essential oils of the most warm and penetrating kind; the application of salt brine; and, lastly, the employment of exercise, either of the part itself, so far as it can easily bear it; or of
the

the whole body by riding; or other mode of gestation.

CCCCLXXV.

The internal remedies are, 1. Large doses of essential oil drawn from resinous substances, such as turpentine; 2. Substances containing such oils, as guaiac; 3. Volatile alkaline salts; 4. These, or other medicines directed to procure sweat, (CLXIX.); and, lastly, calomel, or other preparation of mercury, in small doses, continued for some time.

CCCCLXXVI.

These (CCCCLXIII, CCCCLXIV.) are the remedies successfully employed in the purely chronic rheumatism; and there are still others recommended, as bleeding, general and topical, burning, blistering, and

and issues ; but these appear to me to be chiefly, perhaps only, useful when the disease still partakes of the nature of acute rheumatism.

C H A P.

C H A P. XIII.

OF THE TOOTHACH OR ODONTALGIA.

CCCCLXXVII.

I HAVE formerly considered this disease as a species of Rheumatism, to be treated upon the same principles as those delivered in the preceding chapter; but now, from more attentive consideration, I am led to consider the toothach as a distinct disease. Whilst the most of what has been delivered in the last chapter proceeds upon
the

the supposition that the rheumatism depends upon a certain state of the blood-vessels and of the motion of the blood in them, without this being produced by the irritation of any acrid matter applied ; I judge, that in the toothach, though there are often the same circumstances in the state of the blood-vessels as in the cases of rheumatism, these circumstances in toothach always arise from the application of an acrid matter to the nerves of the teeth.

CCCCLXXVIII.

This disease is often no other than a pain felt in a particular tooth, without any inflammatory affection being at the same time communicated to the neighbouring parts. This, however, is rarely the case ; and for the most part, together with the pain of the tooth, there is some degree of pain and of inflammatory affection communicated

municated to the neighbouring parts, sometimes to the whole of those on the same side of the head with the affected tooth.

CCCCLXXIX.

This inflammatory affection seems to me to be always an affection of muscles, and of the membranous parts connected with these, without any tendency to supuration; and such an affection, as is excited by cold in similar parts elsewhere. It is from these circumstances that I conclude the affection to be of the rheumatic kind.

CCCCLXXX.

It is possible that the muscles and membranes of the jaw may be affected by the same causes which produce the rheumatism in other parts; and it is also possible, that a rheumatic diathesis at first

produced by irritation, may subsist in the muscles and membranes of the jaw, so that the inflammatory affection may be renewed by certain causes without any new application of acrid matter: but I am persuaded that either of these occurrences are very rare, and I have never been able to ascertain any cases of toothach to be of these kinds. I consider it, therefore, as highly probable that this rheumatic affection of the jaws which we name toothach, is always dependent upon some immediate application of acrid matter to the nerves of the teeth.

CCCCCLXXI.

It is however to be observed, that this application of acrid matter does not always excite a pain in the tooth itself, or an inflammatory affection of the neighbouring parts; but that it very often operates by

producing a diathesis only; so that cold applied to the neighbouring parts does excite both a pain in the tooth, and an inflammatory affection of the neighbouring parts which did not appear before.

There seem to be also certain states of the body, which operate upon the same diathesis, so as to produce toothach. Such seems to be the case of pregnant women, who are more liable to toothach than other women. There are probably also some cases of increased irritability which render persons more subject to toothach. Thus women are more liable to the disease than men, and particularly women liable to hysterical affections.

CCCCLXXXII.

The acrid matter producing this disease seems to be generated first in the hard substances of the teeth, and as it often ap-
pears

pears first upon the external surface of these, it might be suspected to arise from the application of external matters to the teeth: but as the production of this acrimony is often begun in the internal cavity of the teeth, where the operation of external matters cannot be suspected, and as even when it begins upon the external parts of the teeth, the operation of the cause is at first in a small portion of the teeth only, that it is difficult to suppose that any matter externally applied could act in such a partial manner; so it is presumed that the acrid matter occasioning the toothach is produced by some vice originating in the substance of the tooth itself. When it begins upon the external surface, it is on the enamel; but upon the internal surface, it must be in the bony part. From what causes it arises in either of these substances, I do not at all know; but I suspect that it often arises from some more general fault in the fluids of the

2 D 2 body.

body. The frequent use of mercury, especially when thrown much upon the mouth, and the state of the fluids in scurvy, seem both of them to give a disposition to a caries in the teeth ; and it is possible that some other acrimonious states of the fluids may have the same effect.

CCCCCLXXXIII.

A caries in some part of the teeth, whether arising upon their internal surface or upon their external proceeding so far as to reach the nerves in the cavity of the teeth, is pretty manifestly the cause of toothach, and of the first attacks of it; but when the cavity of the teeth has been opened, so that the external air or other matters can reach that cavity, these are often the exciting causes of toothach, and serve to prove in general, that acrid matters applied to the nerves occasion the disease.

CCCCCLXXXIV.

CCCCLXXXIV.

What is the nature of the matter produced in the caries of the teeth, I do not understand, nor have I found any proper corrector of it; but I presume it to be of the putrid kind, as it often taints the breath with a fetid odour.

CCCCLXXXV.

In the cure of this disease, a long experience has shown, that the extraction of the carious tooth proves the most effectual, and very often the only effectual, remedy of the disease. But as in some cases this extraction is not proper, and as in many cases it is obstinately avoided, other means of curing the disease, or at least of relieving the pain, have been sought for and much practised.

CCCCCLXXXVI.

Among these remedies, those are likely to be the most effectual which entirely destroy the affected nerve, or at least so much of it, as is exposed to the action of the acrid matter in the tooth. When an opening is made into the cavity of the tooth, the nerve of it may be destroyed most certainly by the actual cautery; and it may also possibly be done by the application of potential caustics, either of the alkaline or acid kind.

CCCCCLXXXVII.

When these remedies cannot be rendered effectual, relief may often be obtained by diminishing the sensibility of the nerve affected, by the application of opium, or of the more acrid aromatic oils, directly to the nerve in the tooth. It appears

appears also that the sensibility of the affected nerve may often be for some time diminished by the external application of opium to the extremities of those nerves in the skin, which are branches of the same fifth pair of nerves with those of the teeth.

CCCCLXXXVIII.

When the disease consists entirely in a pain of the nerve of the tooth, without any considerable affection communicated to the neighbouring parts, the remedies already mentioned are those especially to be employed; but when the disease consists very much in an inflammatory affection of the muscles and membranes of the jaw, and when at the same time there is little or no access for the abovementioned remedies to the affected nerve, other measures are to be employed for relieving the disease.

CCCCLXXXIX.

If the disease be attended with any general phlogistic diathesis of the system, or with any considerable degree of pyrexia, a general bleeding may be useful in relieving the disease: but these circumstances occur very rarely, and the disease is for the most part a purely topical affection, in which, as I observed before, a general bleeding is of very little service. As this disease, however, is a topical inflammation, it might be supposed that topical bleedings would be very useful, and sometimes they are so; but it is seldom that their effects are either considerable or permanent. The reasons of this I take to be, that the disease does not consist in an affection of the blood-vessels alone, as in the ordinary cases of rheumatism; but in a peculiar affection of the fibres both of the muscles and

and of the vessels of the part induced by irritation. The inefficacy of topical bleedings is with me a proof of the disease being of the latter kind.

CCCCXC.

The remedies therefore necessary to give relief in this disease, are those which take off the spasm of the vessels, and especially of the muscles and membranes affected. Such are blistering, brought as near to the part affected as can be conveniently done; and such are also increased excretions excited in the neighbouring parts, as of the saliva and mucus of the mouth by the use of acrid masticatories. It is often sufficient, to excite a strong sensation in the neighbouring parts; as by eau de luce, spirit of lavender, or Hungary water, snuffed up the nostrils; or by the vitriolic æther properly applied to the cheek. It is
upon

upon the same footing that I suppose brandy or other ardent spirit held in the mouth is often of service.

CCCCXCI.

There are cases of toothach in which it does not appear that the disease arises from an acrid matter immediately applied to the nerve of a tooth; but from the external application of cold, or some other causes immediately applied to the muscles and membranes of the jaw; and which therefore seem to require some remedies different from those abovementioned. But in all such cases, it is to be suspected, that the effects of cold or of other such causes are owing to a diathesis produced by an acrid matter applied to the nerve of a tooth, and continuing in some measure to act there; and we have accordingly often found, that the action of those external causes were
to

to be obviated only by the extraction of the tooth from which the diathesis had arisen.

C H A P. XIV.

O F T H E G O U T.

CCCCXCII.

THE Gout, not only as it occurs in different persons, but even as it occurs in the same person at different times, is a disease of such various appearance, that it is difficult to render the history of it complete and exact, or to give a character
of

of it that will universally apply. However, I shall endeavour to describe the disease as it most commonly appears, and to mark the varieties of it as well as I can. From such a history I expect that a general character may be given; and such I think is the following, as given in the last edition of our Nosology :

GEN. XXIII. P O D A G R A.

Morbus hæreditarius, oriens sine causa externa evidente, sed præunte plerumque ventriculi affectione insolita; pyrexia; dolor ad articulum et plerumque pedis pollicis, certe pedum et manuum juncturis, potissimum infestus; per intervalla revertens, et sæpe cum ventriculi et internarum partium affectionibus alternans.

CCCCXCIII.

The Gout is generally a hereditary disease;

ease; but some persons, without hereditary disposition, seem to acquire it; and, in some, a hereditary disposition may be counteracted by various causes. These circumstances may seem to give exceptions to our general position; but the facts directly supporting it are very numerous.

CCCCXCIV.

This disease attacks especially the male sex; but it sometimes, though more rarely, attacks also the female. The females liable to it are those of the more robust and full habits; and it very often happens to such long before the menstrual evacuation has ceased. I have found it occurring in several females, whose menstrual evacuations were more abundant than usual.

CCCCXCV.

This disease seldom attacks Eunuchs;
and,

and, when it does, they seem to be those who happen to be of a robust habit, to lead an indolent life, and to live very full.

CCCCXCVI.

The gout attacks especially men of robust and large bodies, men of large heads, of full and corpulent habits, and men whose skins are covered with a thicker *rete mucosum*, which gives a coarser surface.

CCCCXCVII.

If, with the ancients, we might ascertain, by certain terms, the temperaments of men, I would say, that the gout attacks especially men of a *cholero-sanguine* temperament, and that it very seldom attacks the purely sanguine or melancholic. It is, however, very difficult to treat this matter with due precision.

CCCCXCVIII.

CCCCXCVIII.

The gout seldom attacks persons employed in constant bodily labour, or persons who live much upon vegetable aliment. It is also said to be less frequent among those people who make no use of wine or other fermented liquors.

CCCCXCIX.

The gout does not commonly attack men, till after the age of five and thirty; and generally not till a still later period. There are indeed instances of the gout occurring more early; but these are few in comparison of the numbers which agree with what we have given as the general rule. When the disease does appear early in life, it seems to be in those in whom the hereditary disposition is very strong, and to whom the remote causes to be hereafter mentioned, have

have been applied in a considerable degree.

D.

As the gout is a hereditary disease, and affects especially men of a particular habit, its remote causes may be considered as predisponent and occasional.

DI.

The predisponent cause, so far as expressed by external appearances, or by the general temperament we have already marked; and physicians have been very confident in assigning the occasional causes; but, in a disease depending so much upon a predisposition, the assigning occasional causes must be uncertain; as, in the predisposed, the occasional causes may not always appear, and in persons not predisposed

posed, they may appear without effect. This uncertainty must particularly affect the case of the gout; but I shall offer what appears to me most probable on the subject.

DII.

The occasional causes of the gout seem to be of two kinds. First, those which induce a plethoric state of the body. Secondly, those which, in plethoric habits, induce a state of debility.

DIII.

Of the first kind are a sedentary indolent manner of life, a full diet of animal food, and the large use of wine or of other fermented liquors. These circumstances commonly precede the disease; and if there should be any doubt of their power of

producing it, the fact, however, will be rendered sufficiently probable by what has been observed in CCCCXCVIII.

DIV.

Of the second kind of occasional causes which induce debility are, excess in venery ; intemperance in the use of intoxicating liquors ; indigestion, produced either by the quantity or quality of aliments ; much application to study or business ; night-watching ; excessive evacuations ; the ceasing of usual labour ; the sudden change from a very full to a very spare diet ; the large use of acids and acescents ; and, lastly, cold applied to the lower extremities.

DV.

The first (DIII.) seem to act by increasing

creasing the predisposition. The last (DIV.) are commonly the exciting causes, both of the first attacks, and of the repetitions of the disease.

DVI.

It is an inflammatory affection of some of the joints which especially constitutes what we call a paroxysm of the gout. This sometimes comes on suddenly without any warning, but is generally preceded by several symptoms; such as the ceasing of a sweating which the feet had been commonly affected with before; an unusual coldness of the feet and legs; a frequent numbness, alternating with a sense of prickling along the whole of the lower extremities; frequent cramps of the muscles of the legs; and an unusual turgescence of the veins.

DVII.

While these symptoms take place in the lower extremities, the whole body is affected with some degree of torpor and languor, and the functions of the stomach in particular are more or less disturbed. The appetite is diminished, and flatulency, or other symptoms of indigestion, are felt. These symptoms, and those of DVI. take place for several days, sometimes for a week or two, before a paroxysm comes on: but commonly, upon the day immediately preceding it, the appetite becomes greater than usual.

DVIII.

The circumstances of paroxysms are the following. They come on most commonly in the spring, and sooner or later according as the vernal heat succeeds sooner or later

later to the winter's cold ; and perhaps sooner or later also according as the body may happen to be more or less exposed to vicissitudes of heat and cold.

DIX.

The attacks are sometimes felt first in the evening, but more commonly about two or three o'clock of the morning. The paroxysm begins with a pain affecting one foot, most commonly in the ball or first joint of the great toe, but sometimes in other parts of the foot. With the coming on of this pain, there is commonly more or less of a cold shivering, which, as the pain increases, gradually ceases, and is succeeded by a hot stage of pyrexia, which continues for the same time with the pain itself. From the first attack, the pain becomes by degrees more violent, and continues in this state with great restlessness

of the whole body, till next midnight, after which it gradually remits ; and, after it has continued for twenty-four hours from the commencement of the first attack, it commonly ceases very entirely, and, with the coming on of a gentle sweat, allows the patient to fall asleep. The patient, upon coming out of this sleep in the morning, finds the pained part affected with some redness and swelling, which, after having continued for some days, gradually abate.

DX.

When a paroxysm has thus come on, although the violent pain after twenty-four hours be considerably abated, the patient is not entirely relieved from it. For some days he has every evening a return of more considerable pain and pyrexia, and which continue with more or less violence
till

till morning. After continuing in this manner for several days, the disease sometimes goes entirely off, not to return till after a long interval.

DXI.

When the disease, after having thus remained for some time in a joint, ceases very entirely, it generally leaves the person in very perfect health, enjoying greater ease and alacrity in the functions of both body and mind, than he had for a long time before experienced.

DXII.

At the beginning of the disease, the returns of it are sometimes only once in three or four years; but, after some time, the intervals become shorter, and the attacks become annual; afterwards they come

twice each year, and at length recur several times during the whole course of autumn, winter, and spring; and as it happens that, when the fits are frequent, the paroxysms become also longer, so, in the advanced state of the disease, the patient is hardly ever tolerably free from it, except perhaps for two or three months in summer.

DXIII.

The progress of the disease is also marked by the parts which it affects. At first, it commonly affects one foot only, afterwards every paroxysm affects both feet, the one after the other; and, as the disease continues to recur, it not only affects both feet at once, but after having ceased in the foot which was secondly attacked, returns again into the foot first affected, and perhaps a second time also into the other. Its
changes

changes of place are not only from one foot to the other, but also from the feet into other joints, especially those of the upper and lower extremities ; so that there is hardly a joint of the body that is not, on one occasion or other, affected. It sometimes affects two different joints at the same time, but more commonly it is severe in a single joint only, and passes successively from one joint to another ; so that the patient's affliction is often protracted for a long time.

DXIV.

When the disease has often returned, and the paroxysms have become very frequent, the pains are commonly less violent than they were at first ; but the patient is more affected with sickness, and the other symptoms of the atonic gout, which shall be hereafter mentioned.

DXV.

DXV.

After the first paroxysms of the disease, the joints which have been affected are entirely restored to their former suppleness and strength ; but after the disease has recurred very often, the joints affected do neither so suddenly nor so entirely recover their former state, but continue weak and stiff, and these effects at length proceed to such a degree ; that the joints lose their motion altogether,

DXVI.

In many persons, but not in all, after the disease has frequently recurred, concretions of a chalky nature are formed upon the outside of the joints, and for the most part immediately under the skin. The matter seems to be deposited at first in a fluid form, but afterwards becomes dry
and

and firm. In their dry state, these concretions are a friable earthy substance, very entirely soluble in acids. After they have been formed, they contribute, with other circumstances, to destroy the motion of the joint.

DXVII.

In most persons who have laboured under the gout for many years, a nephritic affection comes on, and discovers itself by all the symptoms which usually attend calculous concretions in the kidneys, and which we shall have occasion to describe in another place. All that is necessary to be observed here is, that the nephritic affection alternates with paroxysms of the gout, and that the two affections, the nephritic and the gouty, are hardly ever present at the same time. This also may be observed, that children of gouty or
nephritic

nephritic parents, commonly inherit one or other of these diseases ; but which ever may have been the principal disease of the parent, some of the children have the one, and some the other. In some of them, the nephritic affection occurs alone, without any gout supervening ; and this happens to be frequently the case of the female offspring of gouty parents.

DXVIII.

In the whole of the history already given, I have described the most common form of the disease, and which therefore, however diversified in the manner I have said, may be still called the regular state of the gout. Upon occasion, however, the disease assumes different appearances ; but, as I suppose the disease to depend always upon a certain diathesis or disposition of the system ; so every appearance which we
can

can perceive to depend upon that same disposition, I still consider as a symptom and case of the gout. The principal circumstance in what we term the *Regular Gout*, is the inflammatory affection of the joints; and, whatever symptoms we can perceive to be connected with, or to depend upon, the disposition which produces that inflammatory affection, but without its taking place, or being present at the same time, we name the *Irregular Gout*.

DXIX.

Of such irregular gout there are three different states, which I name the *atonic*, the *retrocedent*, and the *misplaced* gout.

DXX.

The atonic state is when the gouty diathesis prevails in the system, but, from
certain

certain causes, does not produce the inflammatory affection of the joints. In this case, the morbid symptoms which appear are chiefly affections of the stomach; such as loss of appetite, indigestion, and its various circumstances of sickness, nausea, vomiting, flatulency, acid eructations, and pains in the region of the stomach. These symptoms are frequently accompanied with pains and cramps in several parts of the trunk, and the upper extremities of the body, which are relieved by the discharge of wind from the stomach. Together with these affections of the stomach, there commonly occurs a costiveness; but sometimes a looseness with colic-pains. These affections of the alimentary canal are often attended with all the symptoms of hypochondriasis; as dejection of mind, a constant and anxious attention to the slightest feelings, an imaginary aggravation of these, and an apprehension of danger from them.

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In the same atonic gout, the viscera of the thorax also are sometimes affected, and palpitations, faintings, and asthma, occur.

In the head also occur, headaches, giddiness, apoplectic and paralytic affections.

DXXI.

When the several symptoms now mentioned, occur in habits having the marks of a gouty disposition, this may be suspected to have laid the foundation of them; and especially when either, in such habits, a manifest tendency to the inflammatory affection has formerly appeared; or when the symptoms mentioned are intermixed with, and are relieved by, some degree of the inflammatory gout. In such cases there can be no doubt of considering the whole as a state of the gout.

DXXII.

DXXII.

Another state of the disease I name the *retrocedent* gout. This occurs when an inflammatory state of the joints has, in the usual manner, come on, but which, without arising to the ordinary degree of pain and inflammation, or, at least, without these continuing for the usual time, and receding gradually in the usual manner, they suddenly and entirely cease, while some internal part becomes affected. The internal part most commonly affected is the stomach, which is then affected with anxiety, sickness, vomiting, or violent pain; but sometimes the internal part is the heart, which gives occasion to a syncope; sometimes it is the lungs which are affected with asthma; and sometimes it is the head, giving occasion to apoplexy or palsy. In all these cases, there can be no doubt of the symptoms being all a part of the
same

same disease, however different the affection may seem to be in the parts which it attacks.

DXXIII.

The third state of irregular gout, which we name the *misplaced*, is when the gouty diathesis, instead of producing the inflammatory affection of the joints, produces an inflammatory affection of some internal part, and which appears from the same symptoms that attend the inflammation of those parts arising from other causes.

Whether the gouty diathesis does ever produce such inflammation of the internal parts, without having first produced it in the joints, or if the inflammation of the internal part be always a translation from the joints previously affected, I dare not determine; but, even supposing the latter to be always the case, I think the difference

of the affection of the internal part must still distinguish the misplaced from what I have named the Retrocedent Gout.

DXXIV.

What internal parts may be affected by the misplaced gout, I cannot precisely say, because I have never met with any cases of the misplaced gout in my practice; and I find no cases of it distinctly marked by practical writers, except that of a pneumonic inflammation.

DXXV.

There are two cases of a translated gout; the one of which is an affection of the neck of the bladder, producing pain, strangury, and a catarrhus vesicæ: The other is an affection of the rectum, sometimes by pain alone in that part, and sometimes by hæ-

hæmorrhoidal swellings there. In gouty persons, I have known such affections alternate with inflammatory affections of the joints: But whether to refer those affections to the retrocedent, or to the misplaced gout, I will not presume to determine.

DXXVI.

From the history which I have now delivered of the gout, I think it may be discerned under all its various appearances. It is, however, commonly supposed, that there are cases in which it may be difficult to distinguish gout from rheumatism, and it is possible there may be such cases; but, for the most part, the two diseases may be distinguished with great certainty by observing the predisposition, the antecedents, the parts affected, the recurrences of the disease, and its connection with the other

parts of the system ; which circumstances, for the most part, appear very differently in the two diseases.

DXXVII.

With respect to the gout, our next business is to investigate its proximate cause; which must be a difficult task, and I attempt it with some diffidence.

DXXVIII.

Upon this subject, the opinion which has generally prevailed is, that the gout depends upon a certain morbid matter, always present in the body ; and that this matter, by certain causes, thrown upon the joints or other parts, produces the several phenomena of the disease.

DXXIX.

DXXIX.

This doctrine, however ancient and general, appears to me very doubtful; for,

First, there is no direct evidence of any morbid matter being present in persons disposed to the gout. There are no experiments or observations which show that the blood, or other humours of gouty persons, are in any respect different from those of other persons. Previous to attacks of the gout, there appear no marks of any morbid state of the fluids; for the disease generally attacks those persons who have enjoyed the most perfect health, and appear to be in that state when the disease comes on. At a certain period of the disease, a peculiar matter indeed appears in gouty persons, (DXVI.); but this, which does not appear in every instance, and which appears only after the disease has subsisted for a long time, seems manifestly

to be the effect, not the cause, of the disease. Further, though there be certain acrids which, taken into the body, seem to excite the gout, (DIV.) it is probable that these acrids operate otherwise in exciting the disease, than by affording the material cause of it. In general, therefore, there is no proof of any morbid matter being the cause of the gout.

Secondly, The suppositions concerning the particular nature of the matter producing the gout, have been so various and so contradictory to each other, as to allow us to conclude, that there is truly no proof of the existence of any of them. With respect to many of these suppositions, they are so inconsistent with chemical philosophy, and with the laws of the animal œconomy, that they must be entirely rejected.

Thirdly, The supposition of a morbid matter being the cause of the gout, is not consistent with the phenomena of the disease,

ease, particularly with its frequent and sudden translations from one part to another.

Fourthly, The supposition is further rendered improbable by this, that, if a morbid matter did exist, its operation should be similar in the several parts which it attacks; whereas it seems to be very different, being stimulant, and exciting inflammation in the joints, but sedative and destroying the tone in stomach: Which, upon the supposition of particular matter acting in both cases, is not to be explained by any difference in the part affected.

Fifthly, Some facts, alleged in proof of a morbid matter, are not sufficiently confirmed, such as those which would prove the disease to be contagious. There is, however, no proper evidence of this, the facts given being not only few, but exceptionable; and the negative observations are innumerable.

I 4.

Sixthly,

Sixthly, Some arguments brought in favour of a morbid matter, are founded upon a mistaken explanation. The disease has been supposed to depend upon a morbid matter, because it is hereditary. But the inference is not just; for most hereditary diseases do not depend upon any morbid matter, but upon a particular conformation of the structure of the body, transmitted from the parent to the offspring; and this last appears to be particularly the case in the gout. It may be also observed, that hereditary diseases, depending upon a morbid matter, always appear much more early in life than the gout commonly does.

Seventhly, The supposition of a morbid matter being the cause of the gout, has been hitherto useless, as it has not suggested any successful method of cure. Particular suppositions have often corrupted the practice, and have frequently led
from

from those views which might be useful, and from that practice which experience had approved. Further, though the supposition of a morbid matter has been generally received, it has been as generally neglected in practice. When the gout has affected the stomach, nobody thinks of correcting the matter supposed to be present there, but merely of restoring the tone of the moving fibres.

Eighthly, The supposition of a morbid matter is quite superfluous; for it explains nothing, without supposing that matter to produce a change in the state of the moving powers; and a change in the state of the moving powers, produced by other causes, explains every circumstance, without the supposition of a morbid matter; and, to this purpose, it may be observed, that many of the causes (DIV.) exciting the gout, do not operate

operate upon the state of the fluids, but directly and solely upon that of the moving powers.

Lastly, The supposition of a morbid matter is also superfluous ; because, without any such supposition, I think the disease can be explained in a manner more consistent with its phenomena, with the laws of the animal œconomy, and with the method of cure which experience has approved.

I now proceed to give this explanation ; but, before entering upon it, I must premise some general observations.

DXXX.

The first observation is, that the gout is a disease of the whole system, or depends upon a certain general conformation and state of the body ; which manifestly appears from the facts mentioned from CCCCXCIV,

to

to CCCCXCVII. But the general state of the system depends chiefly upon the state of its primary moving powers; and therefore the gout may be supposed to be chiefly an affection of these.

DXXXI.

My second observation is, that the gout is manifestly an affection of the nervous system; in which the primary moving powers of the whole system are lodged. The occasional or exciting causes (DIV.) are almost all such as act directly upon the nerves and nervous system; and the greater part of the symptoms of the atonic or retrocedent gout are manifestly affections of the same system. (DXX. and DXXII.) This leads us to seek for an explanation of the whole of the disease in the laws of the nervous system, and particularly in the changes

changes which may happen in the balance of its feveral parts.

DXXXII.

My third obfervation is, that the ftomach, which has fo univerfal a confent with the reft of the fyftem, is the internal part that is the moft frequently, and often very confiderably, affected by the gout. The paroxyfms of the difeafe are commonly preceded by an affection of the ftomach (DVII.); many of the exciting caufes (DIV.) act firft upon the ftomach; and the fymptoms of the atonic and retrocedent gout (DXX. DXXXII.) are moft commonly and chiefly affections of the fame organ. This obfervation leads us to remark, that there is a balance fubfifting between the ftate of the internal and that of the external parts; and, in particular, that the ftate of the ftomach is

con-

connected with that of the external parts, (XLIV.) so that the state of tone in the one may be communicated to the other.

DXXXIII.

These observations being premised, I shall now offer the following pathology of the gout.

In some persons there is a certain vigorous and plethoric state of the system (CCCCXCVI.) which, at a certain period of life, is liable to a loss of tone in the extremities (CCCCXCIX. DVI.). This is in some measure communicated to the whole system, but appears more especially in the functions of the stomach (DVII.). When this loss of tone occurs while the energy of the brain still retains its vigour, the vis medicatrix naturæ is excited to restore the tone of the parts ; and accomplishes it by exciting

citing an inflammatory affection in some part of the extremities. When this has subsisted for some days, the tone of the extremities, and of the whole system, are restored, and the patient returns to his ordinary state of health (DXI.).

DXXXIV.

This is the course of things, in the ordinary form of the disease, which we name the *regular gout*; but there are circumstances of the body, in which this course is interrupted or varied. Thus when the atony (DVI. DVII.) has taken place, if the re-action (DIX.) do not succeed, the atony continues in the stomach, or perhaps in other internal parts, and produces that state which we have, for reasons now obvious, named the *atonic gout*.

DXXXV.

DXXXV.

A second case of variation in the course of the gout is, when, to the atony, the reaction and inflammation have to a certain degree succeeded, but, from causes either internal or external, the tone of the extremities, and perhaps of the whole system, is weakened; so that the inflammatory state, before it had either proceeded to the degree, or continued for the time, requisite for restoring the tone of the system, suddenly and entirely ceases. Hence the stomach, and other internal parts, relapse into the state of atony; and perhaps have this increased by the atony communicated from the extremities: All which appears in what we have termed the *retrocedent* gout.

DXXXVI.

A third case of variation from the ordinary

nary course of the gout, is, when, to the atony usually preceding, an inflammatory re-action fully succeeds : But has its usual determination to the joints by some circumstances prevented ; and is therefore directed to an internal part, where it produces an inflammatory affection, and that state of things which we have named the *misplaced gout*.

DXXXVII

We have thus offered an explanation of the circumstances of the system in the several states of the gout; and this explanation we suppose to be consistent with the phenomena of the disease, and with the laws of the animal œconomy. There are indeed, with respect to the theory of the disease, several questions which might be put; to which we have not given any answer. But, tho' perhaps we could give an answer to

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many

many of these questions, it does not here appear necessary; as at present we intend only to establish such general facts with regard to this disease, as may lay a foundation for the cure of it, so far as experience has enabled us to prosecute it. Proceeding, therefore, upon the several parts of the pathology given, as so many matters of fact, I shall now consider what may be attempted towards the cure of the disease.

DXXXVIII.

In entering upon this, I must observe, in the first place, that a cure has been commonly thought impossible; and we acknowledge it to be very probable, that the gout, as a disease of the whole habit, and very often depending upon original conformation, cannot be cured by medicines, the effects of which are always very transitory, and seldom extend to

the producing any considerable change of the whole habit.

DXXXIX.

It would perhaps have been happy for gouty persons, if this opinion had been implicitly received by them ; as it would have prevented their having been so often the dupes of self-interested pretenders, who have either amused them with inert medicines, or have rashly employed those of the most pernicious tendency. I am much disposed to believe the impossibility of a cure of the gout by medicines ; and more certainly still incline to think, that whatever may be the possible power of medicines, yet no medicine for curing the gout has hitherto been found. Although almost every age has presented a new remedy, yet all hitherto offered have very soon

soon been either neglected as useless, or condemned as pernicious.

DXL.

Though unwilling to admit the power of medicines, yet I contend, that a great deal can be done towards the cure of the gout by a regimen: And from what has been observed (CCCCXCVIII.), I am firmly persuaded, that any man who, early in life, will enter upon the constant practice of bodily labour, and of abstinence from animal food, will be preserved entirely from the disease.

Whether there be any other means of radically curing the gout, I am not ready to determine. There are histories of cases of the gout, in which it is said, that by great emotions of mind, by wounds, and by other accidents, the symptoms have been suddenly relieved, and never again

returned ; but how far these accidental cures might be imitated by art, or would succeed in other cases, is at least extremely uncertain.

DXLI.

The practices proper and necessary in the treatment of the gout, are to considered under two heads : *first*, As they are to be employed in the intervals of paroxysms ; or, *secondly*, As during the time of these.

DXLII.

In the intervals of paroxysms, the indications are, to prevent the return of paroxysms, or at least to render them less frequent, and more moderate. During the time of paroxysms, the indications are, to moderate the violence, and shorten the duration

ration of them as much as can be done with safety.

DXLIII.

It has been already observed, that the gout may be entirely prevented by constant bodily exercise, and by a low diet; and I am of opinion, that this prevention may take place even in persons who have a hereditary disposition to the disease. I must add here, that, even when the disposition has discovered itself by several paroxysms of inflammatory gout, I am persuaded that labour and abstinence will absolutely prevent any returns of it for the rest of life. These, therefore, are the means of answering the first indication to be pursued in the intervals of paroxysms; and I must here offer some remarks upon the proper use of these remedies.

DXLIV.

Exercise, in persons disposed to the gout, is directed to two purposes: One of these is the strengthening of the tone of the extreme vessels; and the other, the guarding against a plethoric state. For the former, if exercise be employed early in life, and before intemperance has weakened the body, a very moderate degree of it will answer the purpose; and for the latter, if abstinence be at the same time observed, little exercise will be necessary,

DXLV.

With respect to exercise, this in general is to be observed, that it should never be violent; for, if violent, it cannot be long continued, and must always endanger the bringing on an atony in proportion to the violence of the preceding exercise.

DXLVI.

DXLVI.

It is also to be observed, that the exercise of gestation, though considerable and constant, if it be entirely without bodily exercise, will not answer the purpose in preventing the gout. For this end, therefore, the exercise must be in some measure that of the body ; and must be moderate, but at the same time constant, and continued through life.

DXLVII.

In every case and circumstance of the gout in which the patient retains the use of his limbs, bodily exercise, in the intervals of paroxysms, will always be useful ; and, in the beginnings of the disease, when the disposition to it is not yet strong, exercise may prevent a paroxysm which otherwise might have come on. In more

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advanced

advanced states of the disease, however, when there is some disposition to a paroxysm, much walking will bring it on ; either as it weakens the tone of the lower extremities, or as it excites an inflammatory disposition in them ; and it is probable, that in the same manner strains or contusions often bring on a paroxysm of the gout.

DXLVIII.

Abstinence, the other part of our regimen (DXL.) for preventing the gout, is of more difficult application. If an abstinence from animal-food be entered upon early in life, while the vigour of the system is yet entire, we have no doubt of its being both safe and effectual ; but, if the motive for this diet shall not have occurred till the constitution shall have been broken by intemperance, or by the decline

cline of life, a low diet may then endanger the bringing on an atonic state.

DXLIX.

Further, if a low diet be entered upon only in the decline of life, and be at the same time a very great change in the former manner of living, the withdrawing of an accustomed stimulus of the system may readily throw this into an atonic state.

DL.

The safety of an abstemious course may be greater or less according to the management of it. It is animal-food which especially disposes to the plethoric and inflammatory state, and that food is to be therefore especially avoided ; but, on the other hand, it is vegetable aliment of the lowest quality that is in danger of weakening

ening the system too much, by not affording sufficient nourishment; and more particularly, of weakening the tone of the stomach by its acescency. It is therefore a diet of a middle nature that is to be chosen; and milk is precisely of this kind, as containing both animal and vegetable matter.

As approaching to the nature of milk, and as being a vegetable matter containing the greatest portion of nourishment, the farinaceous feeds are next to be chosen, and are the food most proper to be joined with milk.

DLI.

With respect to drink, fermented liquors are useful only when they are joined with animal-food, and that by their acescency; and their stimulus is only necessary from custom. When, therefore, animal-food is
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to be avoided, fermented liquors are unnecessary; and, by increasing the acescency of vegetables, these liquors may be hurtful. The stimulus of fermented or spirituous liquors, is not necessary to the young and vigorous; and, when much employed, impairs the tone of the system. These liquors, therefore, are to be avoided, except so far as custom and the declining state of the system may have rendered them necessary. For preventing or moderating the regular gout, water is the only proper drink.

DLII.

With respect to an abstemious course, it has been supposed, that an abstinence from animal-food and fermented liquors, or the living upon milk and farinacea alone for the space of one year, might be sufficient for a radical cure of the gout: and
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it is possible that, at a certain period of life, in certain circumstances of the constitution, such a measure might answer the purpose. But this is very doubtful; and it is more probable that the abstinence must, in a great measure, be continued, and the milk diet be persisted in, for the rest of life. It is well known, that several persons who had entered on an abstemious course, and had been thereby delivered from the gout, have, however, upon returning to their former manner of full living, had the disease return upon them with as much violence as before, or in a more irregular and more dangerous form.

DLIII.

It has been alleged, that, for preventing the return of the gout, blood-letting, or scarifications of the feet, frequently repeated, and at stated times, may be practised

tified with advantage; but of this I have had no experience.

DLIV.

Exercise and abstinence are the means of avoiding the plethoric state which gives the disposition to the gout, and are therefore the means proposed for preventing paroxysms, or at least for rendering them less frequent, and more moderate. But many circumstances prevent the steadiness necessary in pursuing these measures; and therefore, in such cases, unless great care be taken to avoid the exciting causes, the disease may frequently return; and, in many cases, the preventing of paroxysms is chiefly to be obtained by avoiding those exciting causes enumerated in DIV. The conduct necessary for avoiding them, will be sufficiently obvious to persons acquainted with the doctrines of the Hygiene, which

which I suppose to have been delivered in another place.

DLV.

A due attention in avoiding those several causes, (DIHI, DIV.) will certainly prevent fits of the gout; and the taking care that the exciting causes be never applied in a great degree, will certainly render fits more moderate when they do come on. But, upon the whole, it will appear, that a strict attention to the whole conduct of life, is in this matter necessary; and therefore, when the predisposition has taken place, it will be extremely difficult to avoid the disease.

DLVI.

I am indeed firmly persuaded, that, by obviating the predisposition, and by avoid-
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ing the exciting causes, the gout may be entirely prevented: But as the measures necessary for this purpose will, in most cases, be pursued with difficulty, and even with reluctance, men have been very desirous to find a medicine which might answer the purpose without any restraint on their manner of living. To gratify this desire, physicians have proposed, and, to take advantage of it, empirics have feigned, many remedies, as we have already observed. Of what nature several of these remedies have been, I cannot certainly say; but, of those which are unknown, we conclude, from their having been only of temporary fame, and from their having soon fallen into neglect, that they have been either inert or pernicious, and therefore I make no inquiry after them; and shall now remark only upon one or two known remedies for the gout which have been lately in vogue.

DLVII.

One of these is what has been named in England the Portland Powder. This is not a new medicine, but is mentioned by GALEN, and, with some little variation in its composition, has been mentioned by the writers of almost every age since that time. It appears to have been at times in fashion, and to have again fallen into neglect; and I think that this last has been owing to its having been found to be, in many instances, pernicious. In every instance which I have known of its exhibition for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints: but they were affected with many symptoms of the atonic gout; and all, soon after finishing their course of the medicine, have been attacked

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with

with apoplexy, asthma, or dropsy, which proved fatal.

DLVIII.

Another remedy which has had the appearance of preventing the gout, is an alkali in various forms, such as the fixed alkali both mild and caustic, lime-water, soap, and absorbent earths. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that, under the use of these medicines, gouty persons have been longer free from the fits of their disease. That, however, the use of these medicines has entirely prevented the returns of gout, I do not know; because I never pushed the use of those medicines for a long time, being apprehensive that the long continued use

of them might produce a hurtful change in the state of the fluids.

DLIX.

With respect to preventing the gout, I have only one other remark to offer. As the preventing the gout depends very much on supporting the tone of the stomach, and avoiding indigestion ; so costiveness, by occasioning this, is very hurtful to gouty persons. It is therefore necessary for such persons to prevent or remove costiveness, and, by a laxative medicine, when needful ; but it is at the same time proper, that the medicine employed should be such as may keep the belly regular, without much purging. Aloetics, rhubarb, magnesia alba, or flowers of sulphur, may be employed, as the one or the other may happen to be best suited to particular persons.

DLX.

DLX.

These are the several measures (from DXLII. to DLIX.) to be pursued in the intervals of the paroxysms; and we are next to mention the measures proper during the time of them.

DLXI.

As during the times of paroxysms the body is in a feverish state, no irritation should then be added to it; and every part, therefore, of the antiphlogistic regimen, (CXXX. to CXXXIII.) except the application of cold, ought to be strictly observed.

Another exception to the general rule may occur when the tone of the stomach is weak, and when the patient has been before much accustomed to the use of strong drink; for then it may be allowable,

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and

and even necessary, to give some animal-food, and a little wine.

DLXII.

That no irritation is to be added to the system during the paroxysms of gout, except in the cases mentioned, is entirely agreed upon among physicians : But it is a more difficult matter to determine whether, during the time of paroxysms, any measures may be pursued to moderate the violence of reaction and of inflammation. Dr Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxysms will be the shorter, as well as the interval between the present and next paroxysm longer : and, if this opinion be admitted as just, it will forbid the use of any remedies which might moderate the inflammation ; which is, to a certain degree, undoubtedly necessary

cessary for the health of the body. On the other hand, acute pain presses for relief, and, although a certain degree of inflammation may seem absolutely necessary, it is not certain but that a moderate degree of it may answer the purpose: And it is even probable, that, in many cases, the violence of inflammation may weaken the tone of the parts. and thereby invite a return of paroxysms. It seems to me to be in this way, that, as the disease advances, the paroxysms become more frequent.

DLXIII.

From these last considerations, it seems probable, that, during the time of paroxysms, some measures may be taken to moderate the violence of the inflammation and pain; and particularly, that in first paroxysms, and in the young and vigorous, blood-letting at the arm may be prac-

tised with advantage: But I am persuaded, that this practice cannot be repeated often with safety; because blood-letting not only weakens the tone of the system, but may also contribute to produce plethora. I believe, however, that bleeding by leeches on the foot, and upon the inflamed part, may be practised, and repeated with greater safety; and I have known instances of its having been practised with safety, to moderate and shorten paroxysms; but how far it may be carried, we have not had experience enough to determine.

DLXIV.

Besides blood-letting, and the antiphlogistic regimen, it has been proposed to employ remedies for moderating the inflammatory spasm of the part affected, such as warm bathing, and emollient poultices. These have sometimes been employed with
advantage

advantage and safety; but, at other times, have been found to give occasion to a retrocession of the gout.

DLXV.

Blistering is a very effectual means of relieving and discussing a paroxysm of the gout; but has also frequently had the effect of rendering it retrocedent.

DLXVI.

The stinging with nettles I consider as analogous to blistering; and I think it probable that it would be attended with the same danger.

DLXVII.

The burning with moxa, or other substances, I consider as a remedy of the same
H 4 kind.

kind. I have had indeed no evidence of this proving hurtful; but neither have I had any proper evidence of its having proved a radical cure.

DLXVIII.

Camphire, and some aromatic oils, have the power of allaying the pain, and of removing the inflammation from the part affected: but these remedies commonly make the inflammation only shift from one part to another, and therefore with the hazard of its falling upon a part where it may be more dangerous; and they have sometimes rendered the gout retrocedent.

DLXIX.

From these reflections (DLXIV; et seq.) it will appear, that some danger must attend

tend every external application to the parts affected, during a paroxysm; and that therefore the common practice of committing the person to patience and flannel alone, is established upon the best foundation.

DLXX.

Opiates give the most certain relief from pain; but, when given in the beginning of gouty paroxysms, occasion these to return with greater violence. When, however, the paroxysms shall have abated in their violence, but still continue to return, so as to occasion painful and restless nights, opiates may be then given with safety and advantage, especially in the case of persons advanced in life, and who have been often affected with the disease.

DLXXI.

DLXXI.

When, after paroxysms have ceased, some swelling and stiffness shall remain in the joints, these symptoms are to be discussed by the diligent use of the flesh-brush.

DLXXII.

Purging, immediately after a paroxysm, will be always employed with the hazard of bringing it on again.

DLXXIII.

I have now finished what has occurred to be said upon the means of preventing and curing the regular gout; and shall now consider its management when it has become irregular, of which, as I have observed above, there are three different cases.

DLXXIV.

DLXXIV.

In the first case, which I have named the Atonic Gout, the cure is to be accomplished by carefully avoiding all debilitating causes; and by employing, at the same time, the means of strengthening the system in general, and the stomach in particular.

DLXXV.

For the avoiding debilitating causes, I must refer to the doctrines of the Hygiene, as in DLIV.

DLXXVI.

For strengthening the system in general, I must recommend frequent exercise on horseback, and moderate walking. Cold bathing also may answer the purpose, and
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may be safely employed, if it appear to be powerful in stimulating the system, and be not applied when the extremities are threatened with any pain.

For supporting the tone of the system in general, when threatened with atonicg out, some animal food ought to be employed, and the more acescent vegetables ought to be avoided. In the same case, some wine also may be necessary; but it should be in moderate quantity, and of the least acescent kinds; and, if every kind of wine shall be found to increase the acidity of the stomach, ardent spirits and water must be employed.

DLXXVII.

For strengthening the stomach, bitters and the Peruvian bark may be employed; but care must be taken that they be not
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constantly employed for any great length of time. Compare DLVII.

The most effectual medicine for strengthening the stomach is iron, which may be employed under various preparations; but, to me, the best appears to be the rust in fine powder, which may be given in very large doses.

For supporting the tone of the stomach, aromatics may be employed; but should be used with caution, as the frequent and large use of them may have an opposite effect; and they should therefore be given only in compliance with former habits, or for palliating present symptoms.

When the stomach happens to be liable to indigestion, gentle vomits may be frequently given; and proper laxatives should be always employed to obviate, or to remove, costiveness.

DLXXVIII.

DLXXVIII.

In the atonic gout, or in persons liable to it, to guard against cold is especially necessary; and the most certain means of doing this, is by repairing to a warm climate during the winter-season.

DLXXIX.

In the more violent cases of the atonic gout, blistering the lower extremities may be useful; but that remedy should be avoided when any pain threatens the extremities. In persons liable to the atonic gout, issues may be established in the extremities, as, in some measure, a supplement to the disease.

DLXXX.

A second case of the irregular gout, is
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that which I have named the Retrocedent. When this affects the stomach and intestines, relief is to be instantly attempted by the free use of strong wines, joined with aromatics, and given warm; or if these shall not prove powerful enough, ardent spirits must be employed, and are to be given in a large dose. In moderate attacks, ardent spirits impregnated with garlic, or with asa foetida, may be employed; or, even without the ardent spirits, a solution of asa foetida with the volatile alkali may answer the purpose. Opiates are often an effectual remedy, and may be joined with aromatics, as in the Electuarium Thebaicum; or they may be usefully joined with volatile alkali and camphire. Musk has likewise proved useful in this disease.

When the affection of the stomach is accompanied with vomiting, this may be encouraged, by taking draughts of warm wine, at first with water, and afterwards
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without it; having at length recourse, if necessary, to some of the remedies above mentioned, and particularly the opiates.

In like manner, if the intestines be affected with diarrhœa, this is to be at first encouraged, by taking plentifully of weak broth; and when this shall have been done sufficiently, the tumult is to be quieted by opiates.

DLXXXI.

When the retrocedent gout shall affect the lungs, and produce asthma, this is to be cured by opiates, by antispasmodics, and, perhaps, by blistering on the breast or back.

DLXXXII.

When the gout, leaving the extremities, shall affect the head and produce pain,
I vertigo,

vertigo, apoplexy, or palsy, our resources are very precarious. The most probable means of relief is, blistering the head; and if the gout shall have receded very entirely from the extremities, blisters may be applied to these also. Together with these blisterings, aromatics, and the volatile alkali, may be thrown into the stomach.

DLXXXIII.

The third case of the irregular gout is what I have named the Misplaced, that is, when the inflammatory affection of the gout, instead of falling upon the extremities, falls upon some internal part. In this case, the disease is to be treated by blood-letting, and by such other remedies as would be proper in an idiopathic inflammation of the same parts.

DLXXXIV.

Whether the translation so frequently made from the extremities to the kidneys, is to be considered as an instance of the misplaced gout, seems, as we have said before, uncertain: but I am disposed to think it something different; and therefore am of opinion, that, in the Nephralgia Calculosa produced upon this occasion, the remedies of inflammation are to be employed no farther than they may be otherwise sometimes necessary in that disease, arising from other causes than the gout.

B O O K III.

OF EXANTHEMATA, OR ERUPTIVE FEVERS.

DLXXXV.

THE diseases comprehended under this title, which make the third Order of Pyrexiaë in our Nosology, are in general such as do not arise but upon occasion of a specific contagion applied, which first produces fever, and afterwards an eruption upon the surface of the body; and which

diseases, for the most part, affect persons but once in the course of their lives.

DLXXXVI.

Whether the character of the Order may be thus limited, or if the Order may be allowed to comprehend also the eruptive fevers produced by a matter generated in the body itself, and likewise those cases of eruption which do not depend upon contagion, or upon a matter generated before the fever, but upon a matter generated in the course of the fever, I am not ready to determine. Of the diseases enumerated by the Nosologists as *Exanthemata*, there are certainly three different kinds, which may be distinguished by the circumstances mentioned in this and the preceding paragraph. Of the first kind are the Small-pox, the Chicken-pox, the Measles, the Scarlet Fever, and the Plague. Of the second kind
seems

seems to be the Erysipelas ; and of the third kind I judge the Miliaria and Petechia to be. But as I am not sufficiently confident in the facts which should support these distinctions, or which would enable us to apply them in all cases ; I go on in this book to treat of almost all the exanthemata enumerated by preceding Nosologists, with only some difference in the arrangement from what it was in my former editions.

C H A P. I.

OF THE SMALL-POX.

DLXXXVII.

THE small-pox is a disease arising from a contagion of a specific nature, which first produces a fever, and, on the third or fourth day thereof, produces an eruption of small red pimples. These are afterwards formed into pustles, containing a matter, which, in the course of eight days from the time of the eruption, is changed

changed into pus. After this, the matter dries, and falls off in crusts.

DLXXXVIII.

This is a general idea of the disease; but there are two particular forms or varieties of it, well known under the appellations of the *Distinct* and *Confluent*, which require to be specially described.

DLXXXIX.

In the former, or the distinct small-pox, the eruptive fever is moderate, and appears to be evidently of the inflammatory kind, or what we name a Synocha. It generally comes on about mid-day, with some symptoms of a cold stage, and commonly with a considerable languor and drowsiness. A hot stage is soon formed, and becomes more considerable on

the second and third days. During this course, children are liable to frequent startings from their slumbers; and adults, if they are kept a-bed, are disposed to much sweating. On the third day, children are sometimes affected with one or two epileptic fits. Towards the end of the third day, the eruption commonly appears, and gradually increases during the fourth; appearing first upon the face, and successively on the inferior parts, so as to be completed over the whole body on the fifth day.

From the third day, the fever abates; and against the fifth, it entirely ceases. The eruption appears first in small red spots, hardly eminent, but by degrees rising into pimples. These are generally upon the face in small number; but, even when more numerous, they are separate and distinct from one another. On the fifth or sixth day, a small vesicle, containing an almost colourless or whey-coloured fluid, appears upon the top
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of each pimple. For two days, these vesicles increase in breadth only, and there is a small hollow pit in their middle; so that it is only against the eighth day that they are raised into spheroidical pustules.

These vesicles or pustules, from their first formation, continue to be surrounded with an exactly circular inflamed margin, which, when the pustules are numerous, diffuses some inflammation over the neighbouring skin, so as to give somewhat of a damask rose colour to the spaces between the pustules. As the pustules increase in size, if they be numerous on the face, against the eighth day the whole of the face becomes considerably swelled; and, in particular, the eye-lids are so much swelled as entirely to shut the eyes.

As the disease thus proceeds, the matter in the pustules becomes by degrees more opaque and white, and at length of a yellowish colour. On the eleventh day, the swelling

swelling of the face is abated, and the pustules seem quite full. On the top of each a darker spot appears; and at this place the pustule, on the eleventh day, or soon after, is spontaneously broken, and a portion of the matter oozes out; in consequence of which, the pustule is shrivelled, and subsides; while the matter oozing out dries, and forms a crust upon its surface. Sometimes a little only of the matter oozes out; and what remains in the pustule becomes thick, and even hard. After some days, both the crusts and the hardened pustules fall off, leaving the skin which they covered of a brown red colour; and it is only after many days that the skin in these places resumes its natural colour. In some cases, where the matter of the pustules has been more liquid, the crusts formed by it are later in falling off, and the part they covered suffers some desquamation, which leaves in it a small pit or hollow.

This is the course of things on the face; and successively, the pustules on the rest of the body take the same. The matter of the pustules, on the arms and hands, is frequently absorbed; so that, at the height of the disease, these pustules appear as empty vesicles. On the tenth and eleventh days, as the swelling of the face subsides, a swelling arises in the hands and feet; but which, again, subsides, as the pustules come to maturity.

When the pustules on the face are numerous, some degree of pyrexia appears on the tenth and eleventh days, but disappears again after the pustules are fully ripened; or perhaps remains in a very slight degree till the pustules on the feet have finished their course. It is seldom that in the distinct small-pox the fever continues longer.

When the pustules on the face are numerous, some uneasiness in the throat, with

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a hoarseness of the voice, comes on upon the sixth or seventh day, and a thin liquid is poured out from the mouth. These symptoms increase with the swelling of the face; and the liquids of the mouth and throat becoming thicker, are more difficultly thrown out. There is, at the same time, some difficulty of swallowing; so that liquids taken in to be swallowed are frequently rejected, or thrown out by the nose. But all these affections of the fauces abate as the swelling of the face subsides.

DXC.

In the other form of small-pox, or what is called the Confluent, the course of the disease is, in general, the same with that we have described; but the symptoms of every stage are more violent, and several of the circumstances are different.

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In particular, the eruptive fever is more violent. The pulse is more frequent and more contracted, approaching to that state of pulse which is found in the typhus. The coma is more considerable, and there is frequently a delirium. Vomiting, also, is a common symptom, especially at the coming on of the disease. In very young infants, epileptic fits are sometimes frequent on the first days of the disease, and sometimes prove fatal before any eruption appears; or they usher in a very confluent and putrid small-pox.

DXCI.

The eruption appears more early on the third day, and it is frequently preceded or accompanied with an erysipelatous efflorescence. Sometimes the eruption appears in clusters, like that of the measles. When the eruption is completed, the pimples are
always

always more numerous upon the face, and at the same time smaller and less eminent. After the eruption, the fever suffers some remission, but never goes off entirely; and, after the fifth or sixth day, it again increases, and continues considerable through the remaining course of the disease.

The vesicles formed on the tops of the pimples appear sooner; and while they increase in breadth, do not retain a circular, but are every way of an irregular figure. Many of them run into one another, inso-much that very often the face is covered rather with one vesicle than with a number of pustules. The vesicles, so far as they are any ways separated, do not arise to a spheroidical form, but remain flat, and sometimes the whole of the face is of an even surface. When the pustules are in any measure separated, their circumference is not bounded by an inflamed margin, and
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the part of the skin that is free from pustules is commonly pale and flaccid.

The liquor that is in the pustules changes from a clear to an opaque appearance, and becomes whitish or brownish, but never acquires the yellow colour and thick consistence that appear in the distinct small-pox.

DXCII.

The swelling of the face which attends the distinct small-pox, when they are numerous, and almost then only, always attends the confluent, comes on more early, and arises to a greater degree; but abates on the tenth day, and on the eleventh still more. At this time the pustules or vesicles break, and shrivelling pour out a liquor that is formed into brown or black crusts, which do not fall off for many days after. Those of the face, in falling off,
leave

leave the parts they cover subject to a desquamation, which pretty certainly produces pittings.

On the other parts of the body, the pustules of the confluent small-pox are more distinct than upon the face, but never acquire the same maturity and consistence of pus as in the properly distinct kind.

The salivation which, only sometimes, attends the distinct small-pox, very constantly attends the confluent; and both the salivation and the affection of the fauces above-mentioned, are, especially in adults, in a higher degree. In infants, a diarrhoea comes frequently in place of the salivation.

In the confluent small-pox, there is often a considerable putrescency of the fluids, as appears from petechiæ, from serous vesicles, under which the skin shows a disposition to gangrene, and from bloody

urine or other hæmorrhagy, all which symptoms frequently accompany this disease.

In the confluent small-pox, the fever, which had only suffered a remission from the time of eruption to that of maturation, is often, at or immediately after this period, renewed with considerable violence. This is what has been called the Secondary Fever; and is, in different cases, of various duration and event.

DXCIII.

We have thus endeavoured to describe the various circumstances of the small-pox; and from the difference of these circumstances, the event of the disease may be determined. The whole of the prognosis may be nearly comprised in the following propositions.

The more exactly the disease retains the

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form

form of the distinct kind, it is the safer; and the more completely the disease takes the form of the confluent kind, it is the more dangerous.

It is only when the distinct kind shows a great number of pustules on the face, or otherwise, by fever or putrescency, approaches to the circumstances of the confluent, that it is attended with any danger.

In the confluent small-pox there is always danger; and this is always more considerable and certain, according as the fever is more violent and permanent, and especially as the marks and symptoms of putrescency are more evident.

When the putrid disposition is very great, the disease sometimes proves fatal before the eighth day; but in most cases it is on the eleventh that death happens, and sometimes it is put off till the fourteenth or seventeenth day.

Though the small-pox should not be
imme-

immediately fatal, the more violent kinds are often followed by a morbid state of the body, of various kind and event. These consequences, as I judge, may be imputed sometimes to an acrid matter produced by the preceding disease, and deposited in different parts; and sometimes to an inflammatory diathesis produced, and determined to particular parts of the body.

DXCIV.

It is, I think, agreed among practitioners, that, in the different cases of small-pox, the difference chiefly depends upon the appearance of distinct or confluent; and, from the above description of these kinds, it will appear, that they chiefly differ in the period of the eruption, in the number of pustules produced, in the form of the pustules, in the state of the matter contained in them, in the continuance of

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the fever, and lastly in the danger of the disease.

DXCV.

Upon inquiring into the causes of these differences, we might readily suspect, that they depended upon a difference of the contagion producing the disease. This, however, is not probable: for there are innumerable instances of the contagion, arising from a person labouring under the small-pox of the distinct kind, producing the confluent; and, on the contrary. Since the practice of inoculation became frequent, we have known the same varicellous matter produce in one person the distinct, and in another the confluent small-pox. It is therefore highly probable, that the difference of the small-pox does not depend upon any difference of the contagion, but upon some difference in the state

state of the persons to whom it is applied, or in the state of certain circumstances concurring with the application of the contagion.

DXCVI.

To find out wherein the difference in the state of the persons to whom the contagion of the small-pox is applied consists, I observe, that the difference between the distinct and confluent small-pox consists especially in the number of pustules produced; which, in the distinct, are generally few; in the confluent, always many. If, therefore, we shall be able to discover what, in the state of different persons, can give occasion to more or fewer pustules, we shall probably be able to account for all the other differences of the distinct and confluent small-pox.

DXCVII.

It is evident, that the contagion of the small-pox is a ferment with respect to the human fluids, and assimilates a great part of them to its own nature; and it is probable, that the quantity thus assimilated, is, in proportion to the bulk of their several bodies, nearly the same in different persons. This quantity passes again out of the body, partly by insensible perspiration, and partly by being deposited in pustules; but if the quantities generated be nearly equal, the quantities passing out of the body by the two ways mentioned are very unequal in different persons; and, therefore, if we can explain the causes which determine more to pass by the one way than by the other, we may thereby discover the causes which give occasion to more pustules in one person than in another.

DXCVIII.

DXCVIII.

The causes which determine more of the variolous matter to pass by perspiration, or to form pustules, are probably certain circumstances of the skin, that determine more or less of the variolous matter to stick in it, or to pass freely through it.

DXCIX.

The circumstance of the skin, which seems to determine the variolous matter to stick in it, is a certain state of inflammation, depending much upon the heat of it: Thus we have many instances of parts of the body, from being more heated, having a greater number of pustules than other parts. In the present practice of inoculation, in which few pustules are produced, much seems to be owing to the care that is taken to keep the skin cool. Parts covered with

K 4 plasters,

plafters, efpecially with thofe of a ftimulant kind, have more puftules than other parts. Further, certain circumftances, fuch as adult age, and full living, determining to a phlogiftic diathefis, feem to produce a greater number of puftules ; while the contrary circumftances have contrary effects.

DC.

It is therefore probable, that an inflammatory ftate of the whole fyftem, and more particularly of the ſkin, gives occaſion to a greater number of puftules: and the cauſes of this may likewise produce moſt of the other circumftances of the confluent ſmall-pox ; ſuch as the period of eruption ; the continuance of the fever ; the effuſion of a more putreſcent matter, and leſs fit to be converted into pus ; and, what ariſes
from

from thence, the form and other circumstances of the pustules.

DCI.

Having thus attempted to account for the chief difference which occurs in the state of the small-pox, we shall now try the truth of our doctrine, by its application to practice.

DCII.

In considering the practice, we view it first, in general, as suited to render the disease more generally benign and safe, and this by the practice of inoculation.

DCIII.

It is not necessary here to describe the operation of inoculating; and what we
name

name the practice of inoculation, comprehends all the several measures which precede or follow that operation, and are supposed to produce its salutary effects.

These measures are chiefly the following.

1. The choosing for the subject of inoculation persons otherwise free from disease, and not liable, from their age or other circumstances, to any incidental disease.

2. The choosing a person at the time of life most favourable to a mild disease.

3. The choosing for the practice a season the most conducive to the mildness of the disease.

4. The preparing the person to be inoculated, by abstinence from animal-food for some time before inoculation.

5. The preparing the person by courses of mercurial and antimonial medicines.

6. The taking care, at the time of inoculation,

culation, to avoid cold, intemperance, fear or other circumstances which might aggravate the future disease.

7. After these preparations and precautions, the choosing a fit matter to be employed in inoculation, by taking it from a person of a sound constitution, and free from any disease or suspicion of it; by taking it from a person who has had the small-pox of the most benign kind; and, lastly, by taking the matter from such persons, as soon as it has appeared in the pustules, either in the part inoculated, or on other parts of the body.

8. The introducing, by inoculation, but a small portion of the contagious matter.

9. After inoculation, the continuing the vegetable diet, as well as the employment of mercurial and antimonial medicines; and, at the same time, frequently employing purgatives.

10. Both

10. Both before and after inoculation, taking care to avoid external heat, either from the sun, artificial fires, warm chambers, much clothing, or being much in bed; and, on the contrary, exposing the person to a free and cool air.

11. Upon the appearance of the eruptive fever, the rendering that moderate by the employment of purgatives; by the use of cooling and antiseptic acids; and especially, by exposing the person frequently to a cool and even a cold air, at the same time giving freely of cold drink.

12. After the eruption, the continuing the application of cold air, and the use of purgatives, during the course of the disease, till the pustules are fully ripened.

DCIV.

These are the measures proposed and practised in the latest and most improved
state

state of inoculation; and the advantages obtained by the whole of the practice, or at least by most of the measures above-mentioned, are now ascertained by a long experience to amount to this, That, in in ninety-nine cases of the hundred, inoculation gives a distinct small-pox only, and that also very generally of the mildest form: but it will still be useful, for the proper conduct of inoculation, to consider the importance and utility of the several measures above-mentioned, that we may thereby more exactly determine upon what the advantages of inoculation more certainly depend.

DCV.

As the common infection may often seize persons labouring under another disease, which may render the small-pox more violent, it is obvious that inoculation
must

must have a great advantage, by avoiding such concurrence. But, as the avoiding such concurrence may often, in the mean while, leave persons exposed to the common infection, it merits inquiry, whether every diseased state should restrain from the practice of inoculation, or what are the particular diseases that should do so. This is not yet sufficiently ascertained by observation; and we have frequently remarked, that the small-pox have often occurred with a diseased state of the body, without being thereby rendered more violent. In particular, we have observed, that a scrophulous habit, or even the presence of scrophula, did not render the small-pox more violent; and we have observed also, that several diseases of the skin are equally innocent. I am of opinion, that they are the diseases of the febrile kind, or ailments ready to induce or aggravate a febrile state, that especially give
the

the concurrence which is most dangerous with the small-pox. I dare not attempt any general rules ; but I am disposed to maintain, that, though a person be in a diseased state, if that state be of uncertain nature and effect, and at the same time the small-pox be exceedingly rife, so as to render it extremely difficult to guard against the common infection, it will always be safer to give the small-pox by inoculation, than to leave the person to take them by the common infection.

DCVI.

Though inoculation has been practised with safety upon persons of all ages ; yet, from what has actually occurred in the cases of common infection, and from several other considerations, there is reason to conclude, that adults are more liable to a violent disease than persons of younger years.

years. At the same time, it is observed, that children, in the time of their first dentition, are liable, from this irritation, to have the small-pox rendered more violent; and that infants, before the time of dentition, upon receiving the contagion of the small-pox, are liable to be affected with epileptic fits, which frequently prove fatal. It is, therefore, upon the whole, evident, that, though circumstances may admit, and even render inoculation at any age proper; yet, for the most part, it will be still more adviseable to choose persons at an age, after the first dentition is over, and before the time of puberty.

DCVII.

Though inoculation has been practised with safety at every season of the year; yet, as it is certain that the cold of winter may increase the inflammatory, and the
I heats

heats of summer increase the putrescent state of the small-pox, it is highly probable that inoculation may have some advantage, from avoiding the extremes either of heat or cold.

DCVIII.

Although the original temperament and constitutions of men are not to be readily changed; it is sufficiently certain, that the conditions of the human body may, by various causes, in many respects be occasionally very much changed: and therefore, as the use of animal food may increase both the inflammatory and putrescent state of the human body, so it must render persons, on receiving the contagion of the small-pox, less secure against a violent disease; and, therefore, inoculation may derive some advantage from abstinence from animal food for some time

before the inoculation is performed: but I am of opinion, that a longer time than that usually prescribed may be often necessary; and I am persuaded, that the Scottish mothers who avoid giving their children animal food till they are past the small-pox, render this disease in them of a milder kind.

DCIX.

I cannot deny that mercurial and antimonial medicines may have some effect in determining to a more free perspiration, and therefore may be of some use in preparing a person for the small-pox; but there are many observations which render me doubtful as to their effect. The quantity of both these medicines, particularly of the antimony, commonly employed, is too inconsiderable to produce any effect. It is true, that the mercurials
have

have often been employed more freely ; but even their salutary effects have not been evident, and their mischievous effects have sometimes appeared. I doubt, therefore, upon the whole, if inoculation derives any advantage from these pretended preparatory courses of medicines.

DCX.

As it has been often observed, in the case of almost all contagions, that cold, intemperance, fear, and some other circumstances, concurring with the application of the contagion, have greatly aggravated the future disease, so it must be the same in the case of the small-pox ; and it is undoubted, that inoculation must derive a great, and perhaps its principal, advantage, from avoiding the concurrences above mentioned.

DCXI.

It has been commonly supposed, that inoculation has derived some advantage from the choice of the matter employed in it; but, from what has been observed in DXCV. it must appear very doubtful if any choice be necessary, or can be of any benefit, in determining the state of the disease.

DCXII.

It has been supposed by some, that inoculation has an advantage, by introducing a small portion only of the contagious matter: But this rests upon an uncertain foundation. It is not known what quantity is introduced by the common infection, and it may be a small quantity only. Although it were larger than that thrown in by inoculation, it is not ascertained that the circum-

cumstance of quantity would have any effect. A certain quantity of ferment may be necessary to excite fermentation in a given mass; but, that quantity given, the fermentation and assimilation are extended to the whole mass; and we do not find that a greater quantity than is just necessary, either increases the activity of the fermentation, or more certainly secures the assimilation of the whole. In the case of the small-pox, a considerable difference in the quantity of contagious matter introduced, has not discovered any effect in modifying the disease.

DCXIII.

Purging has the effect of diminishing the activity of the sanguiferous system, and of obviating its inflammatory state. It is therefore probable, that the frequent use of cooling purgatives is a practice at-

tending inoculation which may be of considerable advantage; and, probably, it is also useful by diminishing the determination to the skin. It appears to me, that mercurials and antimonials, as they are commonly managed, are useful only as they make a part of the purging course.

DCXIV.

It is probable, that the state of the small-pox depends very much upon the state of the eruptive fever, and particularly upon moderating the inflammatory state of the skin; and, therefore, it is probable, that the measures taken for moderating the eruptive fever and inflammatory state of the skin, afford the greatest improvement which has been made in the practice of inoculation. The tendency of purging, and the use of acids, for this purpose, is sufficiently obvious; and upon the same grounds,

grounds, we should suppose, that blood-letting might be useful; but probably this has been omitted, for the same reason that perhaps might have led to the omission of other remedies also, which is, that we have found a more powerful and effectual one in the application of cold air, and the use of cold drink. Whatever doubts or difficulties our theory might present to us on this subject, they may be entirely neglected, as the practice of Indostan had long ago, and the practice of this country has lately by a large and repeated experience, ascertained the safety and efficacy of this remedy; and as it may and can be more certainly employed with the practice of inoculation, than it can be in cases of common infection, it must give a singular advantage to the former.

DCXV.

After the eruption, when a few pimples only, have appeared on the face, the continuing the application of cold air, and the employment of purgatives, has indeed been the practice of many inoculators: but, I think, these practices cannot be said to give any peculiar advantages to inoculation; for when the state of the eruption is determined, when the number of pustules is very small, and the fever has entirely ceased, I hold the safety of the disease to be absolutely ascertained, and the further use of remedies entirely superfluous. In such cases, I judge the use of purgatives to be not only unnecessary, but that they may be often hurtful.

DCXVI.

I have thus considered the several circumstances and practices accompanying
inoculation

inoculation, and have endeavoured to ascertain the utility and importance of each. Upon the whole, I hope I have sufficiently ascertained the general utility and great advantage of this practice, especially consisting in this, that if certain precautions, preparations, and remedies, are of importance, all of them can be employed with more certainty in the practice of inoculation, than in the case of common infection.

It remains now that I should offer some remarks on the conduct of the small-pox, as received by infection, or even when, after inoculation, the symptoms shall prove violent. The latter sometimes happens, although every precaution and remedy have been employed. The cause of this is not well known; but it appears to me to be commonly owing to a disposition of the fluids to putrescency. But, however this may be, it will appear, that, not only in the case of common infection, but even in
that

that of inoculation, there may be occasion for studying the conduct of this disease, in all its possible varying circumstances.

DCXVII.

When, from the prevailing of small-pox as an epidemic, and more especially when it is known that a person not formerly affected with the disease has been exposed to the infection, if such person should be seized with the symptoms of fever, there can be little doubt of its being an attack of the small-pox ; and therefore he is to be treated in every respect, as if the disease had been received by inoculation. He is to be freely exposed to a cool air, to be purged, and to have cooling acids given liberally.

DCXVIII.

If these measures moderate the fever,
• no-

nothing more is necessary: But if the nature of the fever attacking a person be uncertain; or, if with suspicions of the small-pox, the symptoms of the fever be violent; or even if, knowing the disease to be small-pox, the measures mentioned DXCVII. shall not moderate the fever sufficiently; it will be proper to let some blood; and this will be more especially proper, if the person be an adult, of a plethoric habit, and accustomed to full living.

DCXIX.

In the same circumstances, we judge it will be always proper to give a vomit, as useful in the commencement of all fevers, and more especially in this, where a determination to the stomach appears from pain and spontaneous vomiting.

DCXX.

DCXX.

It frequently happens, especially in infants, that, during the eruptive fever of the small-pox, convulsions occur. Of these, if only one or two fits appear on the evening preceding the eruption, they give a favourable prognostic of a mild disease, and require no remedy; but if they occur more early, and be violent and frequently repeated, they are very dangerous, and require a speedy remedy. For this purpose, bleeding is hardly ever of service; blistering always comes too late; and the only remedy I have found effectual, is an opiate given in a large dose.

DCXXI.

These are the remedies necessary during the eruptive fever; and if, upon the eruption, the pimples upon the face be very few
and

and distinct, the disease is no further of any danger, requires no remedies, and the purgatives, which, as has been said before, are by some practitioners continued, prove often hurtful.

But when, upon the eruption, the pimples on the face are very numerous; when they are not distinct; and especially when, upon the fifth day, the fever does not suffer a considerable remission; the disease will still require a great deal of attention.

DCXXII.

If, after the eruption, the fever shall continue; the avoiding heat, and the continuing to expose the body to a cool air, will still be proper. If the fever be considerable, with a full and hard pulse, in an adult person, a bleeding will be necessary; and, more certainly, a cooling purgative. It is, however, seldom that a repetition of
the

the bleeding will be proper, as a loss of strength does usually come on very soon; but the repetition of a purgative, or the frequent use of laxative glysters, is commonly useful.

DCXXIII.

When a loss of strength, with other marks of a putrescent tendency of the fluids, appears, it will be necessary to exhibit the Peruvian bark in substance, and in large quantity. In the same case, the free use of acids, and of nitre, is useful; and it is commonly proper also to give wine very freely.

DCXXIV.

From the fifth day of the disease, onward through the whole course of it, it is proper to give an opiate once or twice a-day,

day; taking care, at the same time, to obviate costiveness, by purgatives, or laxative glysters.

DCXXV.

In a violent disease, from the eighth to the eleventh day, it is proper to lay on blisters successively on different parts of the body, and that without regard to the parts being covered with pustules.

DCXXVI.

If, in this disease, the tumour of the fauces be considerable; the deglutition difficult; the saliva and mucus viscid, and with difficulty thrown out; it will be proper to apply blisters to the external fauces, and to employ diligently detergent gargles.

DCXXVII.

DCXXVII.

During the whole course of the disease, when any considerable fever is present, the frequent exhibition of antimonial medicines, in nauseating doses, has been found useful; and these, for the most part, sufficiently answer the purpose of purgatives.

DCXXVIII.

The remedies mentioned from DCXXII. to DCXXVI. are those frequently necessary, from the fifth day, till the supuration is finished. But as, after that period, the fever is sometimes continued and increased; or, as sometimes, when, after there has been little or no fever before, a fever now arises, and continues with considerable danger; this is what is called the Secondary Fever, and requires particular treatment.

DCXXIX.

When the secondary fever follows the distinct small-pox, and the pulse is full and hard, the case is to be treated as an inflammatory affection, by bleeding and purging. But, if the secondary fever follow the confluent small-pox, and be a continuance or exacerbation of the fever which had subsisted before, it is to be considered as of the putrid kind; and in that case, bleeding is improper. Some purging may be necessary; but the remedies to be chiefly depended on, are the Peruvian bark and acids.

When the secondary fever first appears, whether it is after a distinct or a confluent small-pox, it will be useful to exhibit an antimonial emetic in nauseating doses, but in such manner as to produce some vomiting.

DCXXX.

For avoiding the pits which frequently follow the small-pox, many different measures have been proposed; but none of them appear to be sufficiently certain.

C H A P.

C H A P. II.

OF THE CHICKEN-POX.

DCXXXI.

THIS disease seems to depend upon a specific contagion, and to affect persons but once in their lives. It is hardly ever attended with any danger; but as it seems frequently to have given occasion to the supposition of a person's having the small-pox twice, it is proper to study this

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disease,

disease, and to distinguish it from the genuine small-pox.

DCXXXII.

This may be generally done by attending to the following circumstances.

The eruption of the chicken-pox comes on with very little fever preceding it, or with fever of no determined duration.

The pimples of the chicken-pox, more quickly than those of the small-pox, are formed into little vesicles or pustules.

The matter in these pustules remains fluid, and never acquires the colour or consistence of the pus which appears in the pustules of the small-pox.

The pustules of the chicken-pox are always in three or four days from their first appearance, formed into crusts.

See Dr Heberden in Med. Transact. Vol. I. art. xvii.

C H A P.

C H A P. III,

O F T H E M E A S L E S,

DCXXXIII.

THIS disease also depends upon a specific contagion, and affects persons but once in their lives.

DCXXXIV.

It occurs most frequently in children; but no age is exempted from it, if the

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per-

persons have not been subjected to it before.

DCXXXV.

It commonly appears as an epidemic, first in the month of January, and ceases soon after the summer solstice; but various accidents, introducing the contagion, may produce the disease at other times of the year.

DCXXXVI.

The disease always begins with a cold stage, which is soon followed by a hot, with the ordinary symptoms of thirst, heat, anorexia, anxiety, sickness, and vomiting; and these are more or less considerable in different cases. Sometimes from the beginning, the fever is sharp and violent; often, for the first two days, it is obscure
and

and inconsiderable, but always becomes violent before the eruption, which usually happens upon the fourth day.

DCXXXVII.

This eruptive fever, from its commencement, is always attended with hoarseness, with a frequent hoarse dry cough, and frequently with some difficulty of breathing. At the same time, the eye-lids are somewhat swelled, the eyes are a little inflamed, and pour out tears; and, together with these symptoms, there is a coryza, and frequent sneezing. For the most part, a constant drowsiness attends the beginning of this disease.

DCXXXVIII.

The eruption, as we have said, commonly appears upon the fourth day, first on

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the face, and successively on the lower parts of the body. It discovers itself first in small red points; but, soon after, a number of these appear in clusters, which do not arise into visible pimples, but by the touch are found to be a little prominent. This the case on the face; but on other parts of the body, the prominence, or roughness, is hardly to be perceived. On the face the eruption retains its redness, or has that increased for two days: but, on the third, the vivid redness is changed to a brownish red; and, in a day or two more, the eruption entirely disappears, while a mealy desquamation takes place. During the whole time of the eruption, the face is somewhat turgid, but seldom considerably swelled.

DCXXXIX.

Sometimes, after the eruption has appeared,

peared, the fever ceases entirely : but this is seldom the case ; and more commonly the fever continues, or is increased after the eruption, and does not cease till after the desquamation. Even then the fever does not always cease, but continues with various duration and effect.

DCXL.

Though the fever happen to cease upon the eruption's taking place, it is common for the cough to continue till after the desquamation, and sometimes much longer.

In all cases, while the fever continues, the cough also continues, generally with an increase of the difficulty of breathing ; and both of these symptoms sometimes arise to a degree that denotes a pneumonic affection. This may arise at any period of the disease ; but very often it does not
come

come on till after the desquamation of the eruption.

After the same period, also, a diarrhoea frequently comes on, and continues for some time.

DCXLI.

It is common for the measles, even when they have not been of a violent kind, to be succeeded by inflammatory affections, particularly ophthalmia and phthisis.

DCXLII.

If the blood be drawn from a vein during the measles, with the circumstances necessary to favour the separation of the gluten, this always appears separated, and lying on the surface of the crassamentum, as in inflammatory diseases.

DCXLIII.

DCXLIII.

For the most part the measles, even when violent, are without any putrid tendency; but in some cases such a tendency appears, both in the course of the disease, and especially after the ordinary course of it is finished. See Dr Watson, in London Med. Observations, Vol. IV. art. xi.

DCXLIV.

From what is delivered (from DCXXXVII. to DCXLII.) it will appear, that the measles are distinguished by a catarrhal affection, and by an inflammatory diathesis to a considerable degree; and therefore the danger attending them arises chiefly from the coming on of a pneumonic inflammation.

DCXLV.

DCXLV.

From this consideration it will be obvious, that the remedies especially necessary, are those which may obviate and diminish the inflammatory diathesis ; and therefore, in a particular manner, blood-letting. This remedy may be employed at any time in the course of the disease, or after its ordinary course is finished. It is to be employed more or less according to the urgency of the symptoms of fever, cough, and dyspnoea ; and generally may be employed very freely. But, as the symptoms of pneumonic inflammation seldom come on during the eruptive fever ; and, as this fever is sometimes violent immediately before the eruption, though a sufficiently mild disease be to follow ; so bleeding is seldom very necessary during the eruptive fever, and may often be reserved

served for the periods of greater danger which are perhaps to ensue.

DCXLVI.

In all cases of measles, where there are no marks of putrescency, and where there is no reason, from the known nature of the epidemic, to apprehend putrescency, bleeding is the remedy to be depended upon: but assistance may also be obtained from cooling purgatives; and particularly from blistering on the sides, or between the shoulders.

DCXLVII.

The dry cough may be alleviated by the large use of demulcent pectorals, mucilaginous, oily, or sweet. It may, however, be observed, with respect to these demulcents, that they are not so powerful in involving

volving and correcting the acrimony of the mass of blood as has been imagined; and that their chief operation is by besmearing the fauces, and thereby defending them from the irritation of acrids, either arising from the lungs, or distilling from the head.

DCXLVIII.

For moderating and quieting the cough in this disease, opiates certainly prove the most effectual means, whenever they can be safely employed. In the measles, in which an inflammatory state prevails in a considerable degree, opiates may be supposed to be inadmissible; and, in those cases in which a high degree of pyrexia and dyspnoea show either the presence, or at least the danger, of pneumonic inflammation, I think that opiates might be very hurtful. In cases, however, in which the
dyspnoea

dyspnœa is not considerable, and where bleeding, to obviate or abate the inflammatory state, has been duly employed, and where the cough and watchfulness are the urgent symptoms, I think that opiates may be safely exhibited, and with great advantage. I think, further, that, in all the exanthemata, there is an acrimony diffused over the system, which gives a considerable irritation; and, for obviating the effects of this, opiates are useful, and always proper, when no particular contra-indication prevails.

DCXLIX.

When the desquamation of the measles is finished, though there should then be no disorder remaining, physicians have thought it necessary to purge the patient several times, with a view to draw off the dregs of this disease. that is, a portion of
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the morbid matter which is supposed to remain long in the body. I cannot reject this supposition; but, at the same time, cannot believe, that the remains of the morbid matter, diffused over the whole mass of blood, can be entirely drawn off by purging; and it appears to me, that, to avoid the consequences of the measles, it is not the drawing off the morbid matter which we need to study, so much as the obviating and removing the inflammatory state of the system which had been induced by the disease. With this last view, indeed, purging may still be a proper remedy; but bleeding, in proportion to the symptoms of inflammatory disposition, is yet more so.

DCL.

From our late experience of the benefit of cold air in the eruptive fever of the
finall-

small-pox, some physicians have been of opinion, that the practice might be transferred to the measles; but we have not yet had trials sufficient to ascertain this. There is no doubt that external heat may be very hurtful in the measles, as in most other inflammatory diseases; and therefore the body ought to be kept in a moderate temperature during the whole course of the measles; but how far, at any period of the disease, cold air may be applied with safety, we are yet uncertain. Analogy, though so often the resource of physicians, is, in general, fallacious; and further, tho' the analogy with the small-pox might lead to the application of cold air during the eruptive fever of the measles, the analogy with catarrh seems to be against the practice. After the eruption had appeared upon the skin, we have had many instances of cold air making it disappear, and thereby producing much disorder in the system; and

have also had frequent examples of such disorder being removed by restoring the heat of the body, and thereby again bringing forth the eruption.

CHAP.

C H A P. IV.

O F T H E S C A R L E T F E V E R.

DCLI.

IT may be doubted if the scarlet fever be a disease specifically different from the cynanche maligna above described. The latter is almost always attended with a scarlet eruption; and, in all the instances I have seen of what may be called the scarlet fever, the disease, in almost every person affected, has been attended with an ulcerous sore throat.

DCLII.

This view of the matter may create some doubt ; but I am still of opinion, that there is a scarlet fever which is a disease specifically different from the *cy-nanche maligna*.

Doctor Sydenham has described a scarlet fever, which he had seen prevailing as an epidemic, with all the circumstances of the fever and eruption, without its being accompanied with any affection of the throat ; at least he does not take notice of any such affection, which such an accurate observer could not fail to have done, if any such symptom, as we have commonly seen making a principal part of the disease, had attended those cases which he had observed. Several other writers have described the scarlet fever in the same manner, and I know physicians who have seen the disease in that form ; so that there can be

no

no doubt of there being a scarlet fever not necessarily connected with an ulcerous fore throat, and therefore a disease different from the cynanche maligna.

DCLIII.

But, further, although in all the instances of scarlet fever which I have seen, (and in the course of forty years I have seen it six or seven times prevailing as an epidemic in Scotland), the disease, in almost all the persons affected, was attended with an ulcerous fore throat, or was what Sauvages names the *Scarlatina Anginosa*; and although, in some instances, the ulcers of the throat were of a putrid and gangrenous kind, and at the same time the disease in all its symptoms resembled very exactly the cynanche maligna; yet, I am still persuaded, that not only the scarlatina of Sydenham, but that even the scarlatina

anginosa of Sauvages, is a different disease from the cynanche maligna; and I have formed this opinion from the following considerations.

DCLIV.

1st, There is a scarlet fever entirely free from any affection of the throat, which sometimes prevails as an epidemic; and therefore there is a specific contagion producing a scarlet eruption without any determination to the throat.

2dly, The Scarlatina, which, from its matter being generally determined to the throat, may be properly termed Anginosa, has, in many cases of the same epidemic, been without any affection of the throat; and therefore the contagion may be supposed to be more especially determined to produce the eruption only.

3dly, Though in all the epidemics that

I could allege to be those of the scarlatina anginosa, there have been some cases which, in the nature of the ulcers, and in other circumstances, exactly resembled the cases of the cynanche maligna ; yet I have as constantly remarked, that these cases have not been above one or two in a hundred, while the rest have all of them been with ulcers of a benign kind, and with circumstances hereafter to be described, somewhat different from those of the cynanche maligna.

4thly, On the other hand, as I have two or three times seen the cynanche maligna epidemically prevailing ; so, among the persons affected, I have seen instances of cases as mild as those of the scarlatina anginosa usually are : but here the proportion was reversed ; and these mild cases were not one fifth of the whole, while the rest were of the putrid and malignant kind.

Lastly, It applies to the same purpose to

observe, that, of the cynanche maligna, most of the instances terminate fatally; while, on the other hand, that is the event of very few of the cases of the scarlatina anginosa.

DCLV.

From these considerations, though it may appear that there is some affinity between the cynanche maligna and scarlatina anginosa, it will still remain probable that the two diseases are specifically different. I have been at some pains to establish this opinion: for, from all my experience, I find, that those two diseases require a different treatment; and I therefore now proceed to mention more particularly the circumstances of the scarlatina anginosa.

DCLVI.

DCLVI.

This disease commonly appears about the beginning of winter, and continues throughout that season. It comes on with some cold shivering, and other symptoms of the fever which usually introduces the other exanthemata. But here there is no cough, nor the other catarrhal symptoms which attend the measles; nor is there that anxiety and vomiting which commonly introduce the confluent small-pox, and which more certainly introduce the Cynanche Maligna.

Early in the disease, some uneasiness is felt in the throat; and frequently the deglutition is difficult, generally more so than in the Cynanche Maligna. Upon looking into the fauces, a redness and swelling appear in colour and bulk approaching to the state of these symptoms in the Cynanche Tonsillaris; but, in the Scarlatina, there

there is always more or less of floughs, which seldom appear in the *Cynanche Tonfilaris*; and the floughs are commonly whiter than those in the *Cynanche Maligna*.

While these appearances are discovered in the fauces, upon the third or fourth day a scarlet eruption appears on the skin, in the same form as described in (CCCXIV.) This eruption is commonly more considerable and universal than in the *Cynanche*; but it seldom produces a remission of the fever. The eruption for the most part remains till the third or fourth day after its first appearance; but then goes off, ending in a mealy desquamation. At this time the fever usually subsides; and, generally, at the same time, some degree of sweat comes on.

The floughs on the fauces, which appeared early in the disease, continue for some days; but then falling off, discover
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the swelling abated, and an ulcer formed on one or both tonsils showing a laudable pus; and soon after the fever has subsided, these ulcers heal up entirely. For the most part this disease has much less of coryza attending it than the *Cynanche Maligna*; and, when there is a coryza attending the *Scarlatina*, the matter discharged is less acrid, and has not the fetid smell which it has in the other disease.

In the *Scarlatina*, when the eruption has entirely disappeared, it frequently happens, that, in a few days after, the whole body is affected with an anasarcaous swelling; which, however, in a few days more, gradually subsides.

We have thus described the most common circumstances of the *Scarlatina Anginosa*; and have only to add, that, during the time of its being epidemic, and especially upon its first setting in, there are always a few cases in which the cir-
cum-

cumstances of the disease approach very nearly to those of the Cynanche Maligna; and it is only in these instances that the disease is attended with any danger.

DCLVII.

With respect the cure of this disease, when the symptoms of it are nearly the same with those of the Cynanche Maligna, it requires exactly the same treatment as directed in (CCCXVII.)

DCLVIII.

When the scarlet fever appears, without any affection of the throat, the treatment of it is very simple, and is delivered by Dr Sydenham. An antiphlogistic regimen is commonly all that is requisite; avoiding, on one hand, the application of cold air; and, on the other, any increase of external heat.

DCLIX.

DCLIX.

In the ordinary state of the Scarlatina Anginosa, the same treatment is, in most cases, sufficient; but as here the fever is commonly more considerable, and there is likewise an affection of the throat, some remedies may be often necessary.

DCLX.

When there is a pretty high degree of fever with a full pulse, and a considerable swelling of the tonsils, bleeding is very proper, especially in adults; and it has been frequently practised with advantage: but as, even in the Cynanche Tonsillaris, much bleeding is seldom necessary, (CCCV.); so, in the Scarlatina, when the state of the fever and the appearances of the fauces render the nature of the disease ambiguous, bleeding may be omitted; and, if not altogether

gether avoided, it should at least not be large, and ought not to be repeated.

DCLXI.

Vomiting, and especially nauseating doses of emetics, notwithstanding the inflamed state of the fauces, have been found very useful in this disease. An open belly is proper in every form of this disease; and when the nauseating doses of emetics operate a little downwards, they are more serviceable.

DCLXII.

In every form of the Scarlatina Anginosa, through the whole course of it, detergent gargles should be employed, and more or less as the quantity of floughs and the viscid mucus in the fauces may seem to require.

DCLXIII.

DCLXIII.

Even in the milder states of the Scarlatina Anginosa, it has been common with practitioners to exhibit the Peruvian bark through the whole course of the disease; but we are assured, by much experience, that in such cases it may be safely omitted, though in cases any ways ambiguous it may not be prudent to neglect this remedy.

DCLXIV.

The anasarcaous swelling, which frequently follows the Scarlatina Anginosa, seldom requires any remedy; and, at least, the purgatives so much inculcated, and so commonly exhibited, soon take off the anasarca.

C H A P. V.

O F T H E P L A G U E.

S E C T. I.

Of the Phenomena of the Plague.

DCLXV.

THE Plague is a disease which always arises from contagion; which affects many persons about the same time; proves fatal to great numbers; generally produ-

ces fever ; and, in most persons, is attended with buboes or carbuncles.

DCLXVI.

These are the circumstances which taken together give the character of the disease ; but it is accompanied with many symptoms almost peculiar to itself, that, in different persons are greatly diversified in number and degree, and should be particularly studied. I would wish to lay a foundation for this ; but think it unfit for a person who has never seen the disease to attempt its particular history. For this, therefore, I must refer to the authors who have written on the subject ; but allowing those only to be consulted, who have themselves seen and treated the disease in all its different forms.

DCLXVII.

From the accounts of such authors, it appears to me, that the circumstances which particularly distinguish this disease, and especially the more violent and dangerous states of it, are,

1st, The great loss of strength in the animal functions, which often appears early in the disease.

2dly, The stupor, giddiness, and consequent staggering, which resembles drunkenness, or the head-ach, and various delirium ; which are all of them symptoms denoting a great disorder in the functions of the brain.

3dly, The anxiety, palpitation, syncope, and especially the weakness and irregularity of the pulse, which denote a considerable disturbance in the action of the heart.

4thly, The nausea and vomiting, particularly the vomiting of bile, which shows an accumulation of vitiated bile in the gall-bladder

bladder and biliary ducts, and from thence derived into the intestines and stomach ; all of which symptoms I suppose to denote a considerable spasm, and loss of tone, in the extreme vessels on the surface of the body.

5thly, The buboes or carbuncles, which denote an acrimony prevailing in the fluids. And,

Lastly, The petechiæ, hemorrhagies, and colliquative diarrhœa, which denote a putrescent tendency prevailing to a great degree in the mass of blood.

DCLXVIII.

From the consideration of all these symptoms, it appears, that the plague is especially distinguished by a specific contagion, often suddenly producing the most considerable symptoms of debility in the nervous system or moving powers, as well as of a general putrescency in the fluids ; and it

is from the consideration of these circumstances as the proximate cause, that I think both the prevention and cure of the plague must be directed.

DCLXIX.

If this disease should revisit the northern parts of Europe, it is probable, that, at the time, there will be no physician then alive, who, at the first appearance of the disease, can be guided by his former experience, but must be instructed by his study of the writers on this subject, and by analogy. It is, therefore, I hope, allowable for me, upon the same grounds, to offer here my opinion with respect to both the prevention and cure of this disease.

This paragraph was written before I had any notice of the plague of Moscow anno 1771; but I think it will still apply to
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the case of Great Britain and of many other northern states.

S E C T. II.

Of the PREVENTION of the PLAGUE.

DCLXX.

WITH respect to the prevention: As we are firmly persuaded that the disease never arises in the northern parts of Europe, but in consequence of its being imported from some other country; so the first measure necessary, is the magistrate's taking care to prevent the importation: and this may generally be done by a due attention

to bills of health, and to the proper performance of quarantains.

DCLXXI.

With respect to the latter, we are persuaded, that the quarantain of persons may safely be much less than forty days ; and, if this were allowed, the execution of the quarantain would be more exact and certain, as the temptation to break it would be in a great measure removed.

DCLXXII.

With respect to the quarantain of goods ; it cannot be perfect, unless the suspected goods be unpacked and duly ventilated, as well as the other means employed for correcting the infection they may carry ; and, if all this were properly done, it is probable that the time commonly prescri-
bcd

bed for the quarantain of goods might also be fhortened.

DCLXXIII.

A fecond meafure, in the way of prevention, becomes requifite, when an infection has reached and prevailed in any place, to prevent that infection from fpreading into other places. This can be done only by preventing the inhabitants, or the goods of any infected place, from going out of it, till they have undergone a proper quarantain.

DCLXXIV.

The third meafure for prevention, to be employed with great care, is to hinder the infection from fpreading among the inhabitants of the place in which it has arifen. The meafures neccffary for this are

to be directed by the doctrine laid down in LXXXII.; and from that doctrine we infer, that all persons who can avoid any near communication with infected persons, or goods, may escape the infection.

DCLXXV.

For avoiding such communication, a great deal may be done by the magistrate, 1. By allowing as many of the inhabitants as are free from the infection, and not necessary to the service of the place, to go out of it. 2. By prohibiting all assemblies, or unnecessary intercourse, of the people. 3. By taking care that necessary communications be performed without contact. 4. By making such arrangements and provisions as may render it easy for the families remaining, to shut themselves up in their own houses. 5. By allowing

lowing persons to quit houses in which an infection appears, upon condition that they go into lazarettos. 9. By ventilating and purifying, or destroying at the public expence, all infected goods. Lastly, By avoiding hospitals, and providing separate apartments for infected persons.

The execution of these measures will require great authority, and much vigilance and attention, on the part of the magistrate; but it is not our province to enter into any detail on this subject of the public police.

DCLXXVI.

The fourth and last part of the business of prevention, respects the conduct of persons necessarily remaining in infected places, especially of those obliged to have some communication with persons infected.

DCLXXVII.

DCLXXVII.

Of those obliged to remain in infected places, but not obliged to have any near communication with the sick, they may be preserved from the contagion by avoiding all near communication with other persons, or their goods ; and, it is probable, that a small distance will answer the purpose, if, at the same time, there be no stream of air to carry the effluvia of persons, or goods, to some distance.

DCLXXVIII.

For those who are necessarily obliged to have a near communication with the sick, it is proper to let them know, that some of the most powerful contagions do not operate, but when the bodies of men exposed to the contagion are in certain circumstances which render them more liable to
be

be affected by it, or when certain causes concur to excite the power of it; and therefore, by avoiding these circumstances and causes, they may often escape infection.

DCLXXIX.

The bodies of men are especially liable to be affected by contagions, when they are any ways considerably weakened by want of food, and even by a scanty diet or one of little nourishment; by intemperance in drinking, which, when the stupor of intoxication is over, leaves the body in a weakened state; by excess in venery; by great fatigue; or by any considerable evacuation.

DCLXXX.

The causes which, concurring with contagion,

tagion, render it more certainly active, are cold, fear, and full living.

The several means, therefore, of avoiding or guarding against the action of cold (XCIV. to XCVI.) are to be carefully studied.

DCLXXXI.

Against fear the mind is to be fortified as well as possible, by inspiring a favourable idea of the power of preservative means ; by destroying the opinion of the incurable nature of the disease ; by occupying mens minds with business or labour ; and by avoiding all objects of fear, as funerals, passing bells, and any notice of the death of particular friends.

DCLXXXII.

A full diet of animal-food increases the
irritability

irritability of the body, and favours the operation of contagion; and indigestion, whether from the quantity or quality of food, has the same effect.

DCLXXXIII.

Besides giving attention to obviate the several circumstances (DCX. DCLXXIX. to DCLXXXII.) which favour the operation of contagion, it is probable that some means may be employed for strengthening the bodies of men, and thereby enabling them to resist contagion.

For this purpose, it is probable, that the moderate use of wine, or of spirituous liquors, may have a good effect.

It is probable also, that exercise, when it can be employed, if so moderate as to be neither heating nor fatiguing to the body, may be employed with advantage.

Persons who have tried cold bathing, and commonly feel invigorating effects
from

from it, if they are any ways secure against having already received infection, may possibly be enabled to resist it by the use of the cold bath.

It is probable, that some medicines also may be useful in enabling men to resist infection : but amongst these I can hardly admit the numerous alexipharmics formerly proposed ; or, at least, very few of them, and those only of tonic power. Amongst these last we reckon the Peruvian bark ; and it is perhaps the most effectual. If any thing is to be expected from antiseptics, I think camphire, whether internally or externally employed, is one of the most promising.

Every person is to be indulged in the use of any means of preservation of which he has conceived a good opinion, whether it be a charm or a medicine, if the latter be not directly hurtful.

Whether issues be useful in preserving from, or in moderating the effects of, contagion,

tagion, I cannot determine from the observations I have yet read.

DCLXXXIV.

As neither the atmosphere in general, nor any considerable portion of it, is tainted or impregnated with the matter of contagions ; so the lighting of fires over a great part of the infected city, or other general fumigations in the open air, are of no use for preventing the disease, and may perhaps be hurtful.

DCLXXXV.

It would probably contribute much to check the progress of infection, if the poor were enjoined to make a frequent change of cloathing, and were suitably provided for that purpose ; and if they were, at the same time, induced to make a frequent ventilation of their houses and furniture.

S E C T.

S E C T. III.

Of the CURE of the PLAGUE.

DCLXXXVI.

IN the cure of the plague, the indications are the same as those of fever in general, (CXXVI.); but here they are not all equally necessary and important.

DCLXXXVII.

The measures for moderating the violence of reaction, which operate by diminishing the action of the heart and ar-

I terics

teries (CXXVIII.), have feldom any place here, excepting fo far as the antiphlogiftic regimen is generally proper. Some phyficians, indeed, have recommended bleeding; and there may occur cafes in which bleeding may be ufeful; but, for the moft part, it is unneceffary, and in many cafes it might be very hurtful.

Purging has alfo been recommended; and, in fome degree, it may be ufeful in drawing off the bile, or other putrefcent matters frequently prefent in the intefines; but a large evacuation this way may certainly be hurtful.

DCLXXXVIII.

The moderating the violence of reaction, fo far as it can be done by taking off the fpafm of the extreme veffels (CLI.) is a meafure of the utmoft neceffity in the cure of the plague; and the whole of the

means (CLII. to CC.) suited to this indication are extremely proper.

DCLXXXIX.

The giving an emetic at the very first approach of the disease, would probably be of great service; and it is likely, that at some other periods of the disease emetics might be useful, both by evacuating bile abundant in the alimentary canal, and by taking off the spasm of the extreme vessels.

DCXC.

From some principles with respect to fever in general, and with respect to the plague in particular, I am of opinion, that, after the exhibition of the first vomit, the body should be disposed to sweat; which ought to be raised to a moderate degree only, but continued for at least twenty-four

four hours, or longer if the patient bear it easily.

DCXCI.

This sweating should be excited and conducted agreeably to the rules laid down in CLXVIII.). It is to be promoted by the plentiful use of diluents, rendered more grateful by vegetable acids, or more powerful by being impregnated with some portion of neutral salts.

DCXCII.

To support the patient under the continuance of the sweat, a little weak broth, acidulated with juice of lemons, may be given frequently; and sometimes a little wine, if the heat of the body be not considerable.

DCXCIII.

If sudorific medicines are judged to be necessary, opiates are the most effectual and safe: but they should not be combined with aromatics; and probably may be more effectual, if joined with a portion of emetics, and of neutral salts.

DCXCIV.

If, notwithstanding the use of emetics and sudorifics, the disease should still continue, the cure must depend upon the employment of means for obviating debility and putrescency; and, for this purpose, the various remedies proposed above (from CCI. to CCXXVII), may all be administered, but especially the tonics; and of these the chief are cold drink and the Peruvian bark.

DCXCV.

DCXCV.

In the cure of the plague, some attention is due to the management of buboes and carbuncles ; but we do not touch this, as it belongs to the province of surgery.

C H A P. VI.

OF ERYSIPELAS, OR ST ANTHONY'S FIRE,

DCXCVI.

IN (CCLXXIV.) I mentioned the distinction which I proposed to make between the diseases to be named the Erythema and the Erysipelas; and from thence it will appear, that Erysipelas, as an Erythema following fever, may have its place here,

DCXCVII.

I suppose the erysipelas to depend on

a matter generated within the body, and which, analogous to the other cases of exanthemata, is, in consequence of fever, thrown out upon the surface of the body. I own it may be difficult to apply this to every particular case of erysipelas; but I take the case in which it is generally supposed to apply, that of the erysipelas of the face; which I shall therefore consider here.

DCCVIII.

The Erysipelas of the face comes on with a cold shivering, and other symptoms of pyrexia. The hot stage of this is frequently attended with a confusion of head, and some degree of delirium; and almost always with drowsiness, or perhaps coma. The pulse is always frequent, and commonly full and hard.

DCXCIX.

When these symptoms have continued for one, two, or at most three days, there appears, on some part of the face, a redness, such as that described in (CCLXXV.) as the appearance of Erythema. This redness, at first, is of no great extent; but gradually spreads from the part it first occupied to the other parts of the face, commonly till it has affected the whole; and frequently from the face it spreads over the hairy scalp, or descends on some part of the neck. As the redness spreads, it commonly disappears, or at least decreases, in the parts it had before occupied. All the parts upon which the redness appears are, at the same time, affected with some swelling, which continues for some time after the redness has abated. The whole face becomes considerably turgid; and the eyelids

lids are often so much swelled, as entirely to shut up the eyes.

DCC.

When the redness and swelling have proceeded for some time, there commonly arise, sooner or later, blisters of a larger or smaller size, on several parts of the face. These contain a thin yellowish or almost colourless liquor, which sooner or later runs out. The surface of the skin, in the blistered places, sometimes becomes livid and blackish; but this livor seldom goes deeper than the surface, or discovers any degree of gangrene affecting the skin. On the parts of the face not affected with blisters, the cuticle suffers, towards the end of the disease, a considerable desquamation.

Sometimes the tumour of the eye-lids ends in a suppuration.

DCCI.

DCCI.

The inflammation coming upon the face does not produce any remission of the fever which had before prevailed ; and sometimes the fever increases with the increasing and spreading inflammation.

DCCII.

The inflammation usually continues for eight or ten days ; and, for the same time, the fever and symptoms attending it also continue.

DCCIII.

In the progress of the inflammation the delirium and coma attending it sometimes go on increasing, and the patient dies apoplectic on the seventh, ninth, or eleventh day of the disease. In such cases, it has
been

been commonly supposed that the disease is translated from the external to the internal parts. But I have not seen any instance in which it did not appear to me, that the affection of the brain was merely a communication of the external affection, as this continued increasng at the same time with the internal.

DCCIV.

When the fatal event does not take place, the inflammation, after having affected a part, commonly the whole of the face, and perhaps the other external parts of the head, ceases. With the inflammation, the fever also ceases; and, without any evident crisis, the patient returns to his ordinary state of health.

DCCV.

DCCV.

This disease is not commonly contagious; but as it may arise from an acrid matter externally applied, so it is possible that the disease may sometimes be communicated from one person to another.

Persons who have once laboured under this disease are liable to returns of it.

DCCVI.

The event of this disease may be foreseen from the state of the symptoms which denote more or less affection of the brain. If neither delirium nor coma come on, the disease is seldom attended with any danger; but when these symptoms appear early in the disease, and are in a considerable degree, the utmost danger is to be apprehended.

DCCVII.

DCCVII.

As this disease often arises in the part, at the same time with the coming on of the pyrexia; as I have known it, with all its symptoms, arise from an acrimony applied to the part; as it is commonly attended with a full, and frequently a hard pulse; as the blood drawn in this disease shows the same crust upon its surface, that appears in the phlegmasiæ; and, lastly, as the swelling of the eye-lids, in this disease, frequently ends in a suppuration; so, from these considerations, it seems doubtful if this disease be properly, in Nosology, separated from the Phlegmasiæ. At any rate, I take the disease I have described to be what physicians have named the Erysipelas Phlegmonodes, and that it partakes a great deal of the nature of the Phlegmasiæ.

DCCVIII.

DCCVIII.

Upon this conclusion, the Erysipelas of the face is to be cured very much in the same manner as phlegmonic inflammations, by blood-letting, cooling purgatives, and by employing every part of the antiphlogistic regimen; and our experience has confirmed the fitness of this method of cure.

DCCIX.

The evacuations of blood-letting and purging, are to be employed more or less according to the urgency of symptoms, particularly those of the pyrexia, and of those which mark an affection of the brain. As the pyrexia continues, and often increases with the inflammation of the face; so the evacuations mentioned may be employed

ployed at any time in the course of the disease.

DCCX.

In this, as in other diseases of the head, it is proper to put the patient, as often as he can easily bear it, into somewhat of an erect posture.

DCCXI.

As in this disease there is always an external affection, and as in many instances there is no other ; so various external applications to the part affected have been proposed ; but almost all of them are of doubtful effect. The narcotic, refrigerant, and astringent applications, are suspected of disposing to gangrene ; spirituous applications seem to increase the inflammation ; and all oily or watery applications seem to
occa-

occasion its spreading. The application that seems most safe, and which is now most commonly employed, is that of a dry mealy powder frequently sprinkled upon the inflamed parts.

DCCXII.

An Erysipelas Phlegmonodes frequently appears on other parts of the body, beside the face; and such other erysipelatous inflammations frequently end in suppuration. These cases are seldom dangerous. At coming on, they are sometimes attended with drowsiness, and even with some delirium; but this rarely happens; and these symptoms do not continue after the inflammation is formed. I have never seen an instance of the translation of this inflammation from the limbs to an internal part; and though these inflammations of the limbs be attended with pyrexia, they

they seldom require the same evacuations as the erysipelas of the face. At first they are to be treated by dry mealy applications only; and all humid applications, as fomentations, or poultices, are not to be applied, till, by the continuance of the disease, by the increase of swelling, or by a throbbing felt in the part, it appears that the disease is proceeding to suppuration.

DCCXIII.

We have hitherto considered erysipelas as in a great measure of a phlegmonic nature; and, agreeably to that opinion, we have proposed our method of cure. But it is probable, that an erysipelas is sometimes attended with, or is a symptom of, a putrid fever; and, in such cases, the evacuations proposed above may be impro-

per, and the use of the Peruvian bark may be necessary ; but I cannot be explicit upon this subject, as such putrid cases have not come under my observation.

C H A P.

C H A P. VII.

OF THE MILIARY FEVER.

DCCXIV.

THIS disease is said to have been unknown to the ancients, and that it appeared, for the first time, in Saxony, about the middle of the last century. It is said to have spread from thence into all the other parts of Europe ; and, since the period mentioned, to have appeared in many countries in which it had never appeared before.

Q₂

DCCXV.

From the time of its having been first particularly observed, it has been described and treated of by many different writers; and by all of them, till very lately, has been considered as a peculiar idiopathic disease.

It is said to have been constantly attended with peculiar symptoms. It comes on with a cold stage, which is often considerable. The hot stage, which succeeds, is attended with great anxiety, and frequent sighing. The heat of the body becomes great, and soon produces profuse sweating; preceded, however, by a sense of pricking, as of pin-points, in the skin; and the sweat is of a peculiarly rank and disagreeable odour. The eruption appears sooner or later in different persons, but at no determined period of the disease. It seldom or never appears on the face; but dis-

discovers itself first upon the neck and breast, and from thence often spreads over the whole body.

DCCXVI.

The eruption named Miliary is said to be of two kinds, the one named the Red, the other the White Miliary. The former, which in English is strictly named a Rash, is commonly allowed to be a symptomatic affection; and as the latter is the only one that has any pretensions to be considered as an idiopathic disease, it is this alone that I shall more particularly describe and treat of in the present chapter.

DCCXVII.

What then is called the White Miliary eruption, appears at first like the red, in

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very

very small red pimples, for the most part distinct, but sometimes clustered together. Their slight prominence is distinguished better by the finger than by the eye. Soon after the appearance of this eruption, and at least on the second day, a small vesicle appears upon the top of each pimple. At first the vesicle is whey-coloured; but soon becomes white, and stands out like a little globule on the top of the pimple. In two or three days, these globules break, or are rubbed off; and are succeeded by small crusts, which soon after fall off in small scales. While one set of pimples takes this course, another set succeeds; so that the disease often continues upon the skin for many days together. Sometimes when one crop of this eruption has disappeared, another, after some interval, is produced. And it has been further observed, that in some persons there is such a tendency to this disease, that they have been affected with

with it several times in the course of their lives.

DCCXVIII.

This disease is said to affect both sexes, and persons of all ages and constitutions ; but it has been observed, at all times, to affect especially, and most frequently, lying-in women.

DCCXIX.

This disease is often accompanied with violent symptoms, and has frequently proved fatal. The symptoms attending it, are, however, very various. They are, in one or other instance, all the several symptoms attending febrile diseases ; but I cannot find that any symptom or course of symptoms are steadily the same in different persons, so as to furnish any

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specific

specific character to the disease. When the disease is violent, the most common symptoms are phrenitic, comatose, and convulsive affections, which are also symptoms of all fevers treated by a very warm regimen.

DCCXX.

While there is such a variety of symptoms appearing in this disease, it is not to be expected that any one particular method of cure can be proposed : and accordingly we find, in different writers, different methods and remedies prescribed ; frequent disputes about the most proper ; and those received and practised by some, opposed and rejected by others.

DCCXXI.

I have thus given an account of what I
have

have found delivered by authors who have considered the white miliary fever as an idiopathic disease ; but, now, after having often observed the disease, I must say that I doubt much if it ever be such an idiopathic as has been supposed, and I suspect that there is much fallacy in what has been written on the subject.

DCCXXII.

It seems to me very improbable, that this should have been really a new disease when it was first considered as such. There appear to me very clear traces of it in authors who wrote long before that period ; and, though there were not, we know that the descriptions of the ancients were inaccurate and imperfect, particularly with respect to cutaneous affections ; whilst we know also very well, that those affections which usually appeared as symptomatic

matic only, were commonly neglected, or confounded together under a general appellation.

DCCXXIII.

The antecedent symptoms of anxiety, fighting, and pricking of the skin, which have been spoken of as peculiar to this disease, are, however, common to many others; and, perhaps, to all those in which sweatings are forced out by a warm regimen.

Of the symptoms said to be concomitant of this eruption, there are none which can be said to be constant and peculiar but that of sweating. This, indeed, always precedes and accompanies the eruption; and, while the miliary eruption attends many different diseases, it never, however, appears in any of these, but after sweating; and, in persons labouring under these

these diseases, it does not appear, if sweating be avoided. It is therefore probable, that the eruption is the effect of sweating; and that it is the produce of a matter, not before prevailing in the mass of blood, but generated, under particular circumstances, in the skin itself. That it depends upon particular circumstances of the skin, appears further from hence, that the eruption seldom or never appears upon the face, although it affects the whole of the body besides; that it comes upon those places especially which are more closely covered; and that it can be brought out upon particular parts by external applications.

DCCXXIV.

It is to be observed, that this eruptive disease differs from the other exanthemata in many circumstances; in its not being contagious, and therefore never epidemic; that

that the eruption appears at no determined period of the disease ; that the eruption has no determined duration ; that successive eruptions frequently appear in the course of the same fever ; and that such eruptions frequently recur in the course of the same person's life.

All these circumstances render it extremely probable, that, in the miliary fever, the morbid matter is not a subsisting contagion communicated to the blood, and thence, in consequence of fever and assimilation, thrown out upon the surface of the body ; but a matter occasionally produced in the skin itself, by sweating.

DCCXXV.

This conclusion is further rendered probable from hence, that, while the miliary eruption has no peculiar symptoms, or
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concourse of fymptoms, belonging to it ; yet, upon occasion, it accompanies almost all febrile difeases, whether inflammatory or putrid, if these happen to be attended with fweating ; and from thence it may be prefumed, that the miliary eruption is a fymptomatic affection only, produced in the manner we have faid.

DCCXXVI.

But, as this fymptomatic affection does not always accompany every instance of fweating, it may be proper to inquire, what are the circumftances which efpecially determine this eruption to appear ? To this, however, I can give no full and proper anfwer. I cannot fay that there is any one circumftance which in all cafes gives occafion to this eruption ; nor can I fay what different caufes may, in different cafes, give occafion to it. There is only
one

one observation I can offer to the purpose of this inquiry ; and it is, that, of the persons sweating under febrile diseases, those are especially liable to the miliary eruption, who have been previously weakened by large evacuations, particularly of blood. This will explain why it happens to lying-in women more frequently than to any other persons ; and to confirm this explanation, I have remarked, that the eruption happened to women not in childbed, but who had been much subjected to a frequent and copious menstruation, and to an almost constant fluor albus. I have also had occasion to observe it happen to men in fevers, after wounds from which they had suffered a great loss of blood.

Further, that this eruption is produced by a certain state of debility, will appear probable, from its often occurring in fevers of the putrid kind, which are always attended with great debility. It is true,
that

that it also sometimes attends inflammatory diseases, when it cannot be accounted for in the same manner; but I believe it will be found to attend especially those inflammatory diseases in which the sweats have been long protracted or frequently repeated, and which have thereby produced a debility, and perhaps a debilitating putrid diathesis.

DCCXXVII.

It appears so clearly to me that this eruption is always a symptomatic and factitious affection, that I am persuaded it may be in most cases prevented merely by avoiding sweats. Spontaneous sweatings, in the beginning of diseases, are very rarely critical; all sweatings, not evidently critical, should be prevented; and the promoting them, by increasing external heat, is commonly very pernicious. Even critical sweats

sweats should hardly be encouraged by such means. If, therefore, spontaneous sweats arise, they are to be checked by the coolness of the chamber ; by the lightness and looseness of the bed-clothes ; by the persons laying out their hands and arms, and by their taking cold drink : and, by these precautions, I think I have frequently prevented miliary eruptions, which were otherwise likely to have appeared, particularly in lying-in women.

DCCXXVIII.

But it may happen, when these precautions have been neglected, or from other circumstances, that a miliary eruption does actually appear ; and the question will then be put, how the case is to be treated ? It is a question of consequence, because I believe that the matter here generated is often of a virulent kind ; it is frequently

the offspring of putrescency; and, when treated by increafing the external heat of the body, it feems to acquire a virulence which produces thofe fymptoms mentioned in (DCCXIX.), and proves certainly fatal.

It has been an unhappy opinion with moft phyficians, that eruptive difeafes were ready to be hurt by cold; and that it was therefore neceffary to cover up the body very clofely, fo as thereby to increafe the external heat. We now know that this is a miftaken opinion; that increafing the external heat of the body is very generally mifchievous; and that feveral eruptions not only admit, but require the application of cold air. We are now perfuaded, that the practice which formerly prevailed, in the cafe of miliary eruptions, of covering up the body clofe, and both by external means, and internal remedies, encouraging the fwettings which accompany this eruption,

tion, was highly pernicious, and commonly fatal. I am therefore of opinion, even when a miliary eruption has appeared, that in all cases where the sweating is not manifestly critical, we should employ all the several means of stopping it that are mentioned above ; and I have sometimes had occasion to observe, that even the admission of cool air was safe and useful.

DCCXXIX.

This is, in general, the treatment of miliary eruptions ; but, at the same time, the remedies suited to the primary disease are to be employed ; and therefore, when the eruption happens to accompany inflammatory affections, and when the fulness and hardness of the pulse or other symptoms show an inflammatory state present, the case is to be treated by bloodletting, purging, and other antiphlogistic remedies.

Upon

Upon the other hand, when the miliary eruption attends diseases in which debility and putrescency prevail, it will be proper to avoid all evacuations, and employ tonic and antiseptic remedies, particularly the Peruvian bark, cold drink, and cold air.

I shall conclude this subject with mentioning, that the venerable octogenarian practitioner, de Fischer, when treating of this subject, in laying down the indications of cure, has given this as one of them:
' Excretionis periphericæ non primariam
' habere rationem.'

C H A P. VIII.

OF THE REMAINING EXANTHEMATA:

URTICARIA, PEMPHIGUS, AND APHTHA.

DCCXXX.

THE Nettle Rash is a name applied to two different diseases. The one is the chronic eruption described by Dr Herberden in the Medical Transactions, Vol. I. art. xvii. which, as not being a febrile disorder, does not belong to this place. The other is the Urticaria of our Synopsis, which, as taken into every system of Nosology as
one

one of the Exanthemata Febrilia, is properly to be treated of here.

DCCXXXI.

I have never observed this disease as contagious and epidemic; and the few sporadic cases of it which have occurred to me, have seldom taken the regular course described by authors. At the same time, as the accounts of different authors are not very uniform, and hardly consistent, I cannot enter further into the consideration of this subject; and I hope it is not very necessary, as on all hands it is agreed to be a mild disease, and such as seldom requires the use of remedies. It is generally sufficient to observe an antiphlogistic regimen, and to keep the patient in a temperature that is neither hot nor cold.

DCCXXXII.

The Pemphigus, or Vesicular Fever, is a rare and uncommon disease, and very few instances of it are recorded in the writings of physicians. As I have never had occasion to see it, it would be improper for me to treat of it, and I do not choose to repeat after others, while the disease has yet been little observed, and its character does not seem to be exactly ascertained. Vid. Acta Helvetica, vol. ii. p. 260. Synopsis Nosolog. vol. ii. p. 149.

DCCXXXIII.

The Aphtha, or Thrush, is a disease better known; and, as it commonly appears in infants, it is so well understood as not to need our treating of it here. As an idiopathic disease, affecting adults, I have not seen it in this country: but it seems to be

more frequent in Holland; and, therefore, for the study of it, I refer to Dr Boerhaave, and his commentator Van Swieten, whose works are in every body's hands.

DCCXXXIV.

The Petechia has been, by all our Nosologists, enumerated amongst the exanthemata; but as, according to the opinion of most physicians, it is very justly held to be always a symptomatic affection only, I cannot give it a place here.

B O O K IV.
OF HEMORRHAGIES.

C H A P. I.

OF HEMORRHAGY IN GENERAL.

DCCXXXV.

IN establishing a class or order of diseases, under the title of *Hemorrhagies*, Nosologists have employed the single circumstance of an effusion of red blood, as the character

character of such a class or order. By this means, they have associated diseases which in their nature are very different; but, in every methodical distribution, such arbitrary and unnatural associations should be avoided as much as possible. Further, by that management Nosologists have suppressed or lost sight of an established and well-founded distinction of hemorrhagies into Active and Passive.

DCCXXXVI.

It is my design to restore this distinction; and I shall therefore here, under the title of Hemorrhagies, comprehend those only which have been commonly called Active, that is, those attended with some degree of pyrexia; which seem always to depend upon an increased impetus of the blood in the vessels pouring it out, and
which

which chiefly arise from an internal cause. In this I follow Dr Hoffman, who joins the active hemorrhagies with the febrile diseases; and have accordingly established these hemorrhagies as an order in the class of Pyrexiaë. From this order I exclude all those effusions of red blood that are owing entirely to external violence; and all those which, though arising from internal causes, are, however, not attended with pyrexia, and which seem to be owing to a putrid fluidity of the blood, to the weakness or to the erosion of the vessels, rather than to any increased impetus of the blood in them.

DCCXXXVII.

Before proceeding to treat of those proper hemorrhagies which form an order in our Nosology, I shall treat of active hemorrhagy in general; and indeed the several
genera

genera and species to be treated of particularly afterwards, have so many circumstances in common with one another, that the general consideration to be now offered will prove both proper and useful.

S E C T. I.

Of the PHENOMENA *of* HEMORRHAGY

DCCXXXVIII.

THE phenomena of hemorrhagy are generally the following.

Hemorrhagies happen especially in plethoric habits, and to persons of a sanguine temperament. They appear most commonly in the spring, or in the beginning of summer.

For some time, longer or shorter in different

ferent cases, before the blood flows, there are some symptoms of fulness and tension about the parts from whence the blood is to issue. In such parts as fall under our view, there are some redness, swelling, and sense of heat or of itching; and in the internal parts, from which blood is to flow, there is a sense of weight and heat; and, in both cases, various pains are often felt in the neighbouring parts.

DCCXXXIX.

When these symptoms have subsisted for some time, some degree of a cold stage of pyrexia comes on, and a hot stage is formed; during which, the blood flows of a florid colour, in a greater or lesser quantity, and continues to flow for a longer or shorter time; but commonly, after some time, the effusion spontaneously ceases, and together with it the pyrexia also.

DCCXL.

DCCXL.

During the hot stage which precedes an hemorrhagy, the pulse is frequent, quick, full, and often hard; but, as the blood flows, the pulse becomes softer and less frequent.

DCCXLI.

In hemorrhagies, blood drawn from a vein, does, upon its concreting, commonly show the gluten separated, or a crust formed, as in the cases of Phlegmasiæ.

DCCXLII.

Hemorrhagies, from internal causes, having once happened, are apt, after a certain interval, to return; in some cases very often, and frequently at stated periods.

DCCXLIII.

DCCXLIII.

These are, in general, the phenomena of hemorrhagy; and if in some cases all of them be not exquisitely marked, or if perhaps some of them do not at all appear, it imports only, that, in different cases, the system is more or less generally affected; and that, in some cases, there are purely topical hemorrhagies, as there are purely topical inflammations.

S E C T.

S E C T. II.

Of the PROXIMATE CAUSE *of* HEMORRHAGY.

DCCXLIV.

THE pathology of hemorrhagy seems to be sufficiently obvious. Some inequality in the distribution of the blood, occasions a congestion in particular parts of the sanguiferous system; that is, a greater quantity of blood is poured into certain vessels than their natural capacity is suited to receive. These vessels become, thereby, preternaturally distended; and this distention, proving a stimulus to them, excites their action to a greater degree than usual, which, push-

pushing the blood with unusual force into the extremities of these vessels, opens them by anastomosis, or rupture ; and, if these extremities be loosely situated on external surfaces, or on the internal surfaces of certain cavities that open outwardly, a quantity of blood flows out of the body.

DCCXLV.

This reasoning will, in some measure, explain the production of hemorrhagy. But it appears to me, that, in most cases, there are some other circumstances that concur to produce it : for it is probable, that, in consequence of congestion, a sense of resistance arises, and excites the action of the *Vis Medicatrix Naturæ* ; the exertions of which are usually made by the formation of a cold stage of pyrexia, inducing a more vigorous action of the vessels ; and the concurrence of this exertion more effec-

effectually opens the extremities, and occasions the flowing out of the blood.

DCCXLVI.

What has been delivered in the two preceding paragraphs, seems to explain the whole phenomena of hemorrhagy, except the circumstance of its frequent recurrence, which I apprehend may be explained in the following manner. The congestion and consequent irritation being taken off by the flowing of the blood ; this, therefore, soon after, spontaneously ceases ; but, at the same time, the internal causes which had before produced the unequal distribution of the blood, commonly remain, and must now operate the more readily, as the over-stretched and relaxed vessels of the part will more easily admit of a congestion of blood in them, and, consequently, pro-

duce the same series of phenomena as before.

DCCXLVII.

This may sufficiently explain the ordinary return of hemorrhagy : but there is still another circumstance, which, as commonly concurring, is to be taken notice of; and that is, the general plethoric state of the system, which renders every cause of unequal distribution of more considerable effect. Though hemorrhagy may often depend upon the state of the vessels of a particular part being favourable to a congestion's being formed in them ; yet, in order to that state's producing its effect, it is necessary that the whole system should be at least in its natural plethoric condition ; and, if this should be in any degree increased beyond what is natural, it will still more certainly determine the effects
of

of topical conformation to take place. The return of hemorrhagy, therefore, will be more certainly occasioned, if the system becomes preternaturally plethoric ; but hemorrhagy has always a tendency to increase the plethoric state of the system, and, consequently, to occasion its own return.

DCCXLVIII.

To shew that hemorrhagy does contribute to produce or increase the plethoric state of the system, it is only necessary to observe, that the quantity of serous fluids being given, the state of the excretions depends upon a certain balance between the force of the larger arteries propelling the blood, and the resistance of the excretories : but the force of the arteries depends upon their fulness and distention, chiefly given to them by the quantity of red globules and

gluten, which are, for the greatest part, confined to the red arteries ; and therefore, the *spoliation* made by an hemorrhagy, being chiefly of red globules and gluten, the effusion of blood must leave the red arteries more empty and weak. In consequence of the weaker action of the red arteries, the excretions are in proportion diminished ; and, therefore, the ingesta continuing the same, more fluids will be accumulated in the larger vessels. It is by this means that the loss of blood by hemorrhagies, whether artificial or spontaneous, if within certain bounds, is commonly so soon recovered : but, as the diminution of the excretions, from a less quantity of fluid being impelled into the excretories, gives occasion to these vessels to fall into a contracted state ; so, if this shall continue long, these vessels will become more rigid, and will not yield to the same impelling force as before. Although the arteries, therefore, by new
blood

blood collected in them, shall have recovered their former fulness, tension, and force, yet this force will not be in balance with the resistance of the more rigid excretories, so as to restore the former state of excretion; and, consequently, a further accumulation will take place in the arteries, and an increase of their plethoric state be thereby induced. In this manner, we perceive more clearly, that hemorrhagy, as producing a more plethoric state of the system, has a tendency to occasion its own recurrence with greater violence; and, as the renewal and further accumulation of blood require a determinate time, so, in the several repetitions of hemorrhagy, that time will be nearly the same; and therefore the returns of hemorrhagy will be commonly at stated periods, as has been observed frequently to happen.

DCCXLIX.

I have thus explained the nature of hemorrhagy in general, as depending upon some inequality in the distribution of the blood, occasioning a congestion of it in particular parts of the sanguiferous system. It is indeed probable, that, in most persons, the several parts of the sanguiferous system are in balance with one another; and that the density, and consequently the resistance, in the several vessels, is in proportion to the quantity of blood which each should receive; from whence it frequently happens, that no inequality in the distribution of the blood takes place in the course of a long life. If, however, we consider that the sanguiferous system is constantly in a plethoric state, that is, that the vessels are constantly distended beyond that size which they would be of, if free from any distending force, we shall be satisfi-

satisfied that this state may be readily changed. For as, on the one hand, the vessels are elastic, so as to be under a constant tendency to contract upon the withdrawing of any part of the distending force; and, on the other hand, are not so rigid but that, by an increase of the impetus of the blood in them, they may be more than ordinarily distended; so we can easily understand how, in most persons, causes of an increased contraction or distention may arise in one part or other of the system, or that an unequal distribution may take place; and how, in an exquisitely distended or plethoric system, a small inequality in the distribution of the blood may form those congestions which give occasion to hemorrhagy.

DCCL.

In this manner I endeavour to explain

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how hemorrhagy may be occasioned at any period of life, or in any part of the body: but hemorrhagies happen in certain parts more frequently than in others, and at certain periods of life more readily than at others; and therefore, in delivering the general doctrine of hemorrhagy, it may be required that I should explain those circumstances which produce the specialities mentioned; and I shall now attempt it.

DCCLI.

The human body, from being of a small bulk at its first formation, grows afterwards to a considerable size. This increase of bulk consists, in a great measure, in the increase of the quantity of fluids, and a proportional enlargement of the containing vessels. But, at the same time, the quantity of solid matter is also gradually increased; and, in whatever manner we
may

may suppose this to be done, it is probable that the progress, in the whole of the growth of animal bodies, depends upon the extension of the arterial system; and such is the constitution of the sanguiferous system, that the motion of the blood in the arteries has a constant tendency to extend them in every dimension.

DCCLII.

As the state of the animal-solid is, at the first formation of the body, very lax and yielding; so the extension of the system proceeds, at first, very fast: but, as the extension gives occasion to the apposition of more matter to the solid parts, these are, in proportion to their extension, constantly acquiring a greater density, and therefore giving more resistance to their further extension and growth. Accordingly, we observe, that as the growth of the body advances,

vances, its increase in any given time, becomes proportionally less and less, till at length it ceases altogether.

DCCLIII.

This is the general idea of the growth of the human body, till it attain the utmost bulk which it is capable of acquiring; but, it is to be remarked, that this growth does not proceed equally in every part of the body, it being requisite for the œconomy of the system, that certain parts should be first evolved, and should also acquire their full bulk sooner than others. This appears particularly with respect to the head, the parts of which appear to be first evolved, and soonest to acquire their full size.

DCCLIV.

To favour this unequal growth, it is presumed,

sumed, that the dimensions or the laxity of the vessels of the head, or that the direction of the force of the blood, are adapted to the purpose; and from what has been said in (DCCLII.), it will also certainly follow, that as the vessels of the head grow fastest, and soonest acquire their full size, so they will soonest also acquire that density which will prevent their further extension. While, however, the force of the heart, and the quantity of the fluids, with respect to the whole system, remain the same, the distending and extending powers will be directed to such parts as have not yet acquired the same density and dimensions as those first evolved; and thus the distending and extending powers will proceed to operate till every part of the system, in respect of density and resistance, shall have been brought to be in balance with every other, and till the whole be in balance with the force of the heart, so that there can be no further

further growth in any particular part, unless some preternatural circumstance shall happen to arise.

DCCLV.

In this process of the growth of the body, as it seems in general to depend upon a certain balance between the force of the heart, or distending power, and the resistance of the solids ; so it will appear, that, while the solids remain very lax and yielding, some occasional increase of the distending power may arise without producing any very perceptible disorder in the system. But, it will also appear, that, in proportion as the distending power and resistance of the solids come to be more nearly in exact balance with one another, so any increase of the distending power will more readily produce a rupture of vessels, which do not easily yield to extension.

DCCLVI.

DCCLVI.

From all this, it must follow, that the effects of any unusually plethoric state of the system, will be different according as this shall occur at different periods of the growth of the body. Accordingly, it is evident, that if the plethoric state arises while the head is yet growing, and while the determination of the blood is still more to the head than to the other parts, the increased quantity of the blood will be especially determined to the head; and as there also, at the same time, the balance between the distending and extending powers is most nearly adjusted, so the determination of the blood will most readily produce in that part a rupture of the vessels, or an hemorrhagy. Hence it is, that hemorrhagies of the nose so frequently happen in young persons; and in these more readily, as they approach nearer to their acmé, or full growth;

growth ; or, it may be said, perhaps more properly, as they approach nearer to the age of puberty, when, perhaps, in both sexes, but especially in the female, a new determination arises in the system.

DCCLVII.

The determination of a greater quantity of blood to the vessels of the head, might be supposed to occasion a rupture of vessels in other parts of the head, as well as in the nose : but such a rupture does not commonly happen ; because in the nose, there is, for the purpose of sense, a considerable net-work of blood vessels expanded on the internal surface of the nostrils, and covered only with thin and weak teguments. From this circumstance it is, that upon any increased impetus of the blood in the vessels of the head, those of the nose are most easily broken ; and the effusion from the nose
taking

taking place, it not only relieves the other extremities of the external carotid, to which the arteries of the nose chiefly belong, but relieves also, in a great measure, the system of the internal carotid. For, from the internal carotid, certain branches are sent to the nose, are spread out on its internal surface, and probably inosculated with the extremities of the external carotid: so that, whichever of the extremities are broken, the *vis derivationis* of Haller will take place; the effusion will relieve the whole sanguiferous system of the head; and the same effusion will also commonly prevent an hemorrhagy happening at the same time in any other part of the body.

DCCLVIII.

From these principles, it will appear why hemorrhagies of the nose, so frequent before the period of puberty, or of the acmé, seldom

feldom happen after these periods : and I must observe further, that although they should occur, they would not afford any objection to my doctrine, as such hemorrhagies might be imputed to a peculiar laxity of the vessels of the nose, and perhaps to a habit acquired with respect to these vessels, while the balance of the system might be otherwise duly adjusted.

DCCLIX.

When the process of the growth of the body goes on regularly, and the balance of the system is properly adjusted to the gradual growth of the whole, as well as to the successive growth of the several parts, even a plethoric state does not produce any hemorrhagy, or at least any after that of the nose : but if, while the plethoric state continues, any inequality shall also subsist in any of the parts of the system, congestions,
hemorrhagic

hemorrhagic or inflammatory, may be still readily formed.

DCCLX.

In general, it may be observed, that, when the several parts of the system of the aorta have attained their full growth, and are duly balanced with one another, if then any considerable degree of plethora remain or arise, the nicety of the balance will be between the systems of the aorta and pulmonary artery, or between the vessels of the lungs and those of all the rest of the body. And although the lesser capacity of the vessels of the lungs is commonly compensated by the greater velocity of the blood in them ; yet, if this velocity be not always adjusted to the necessary compensation, it is probable that a plethoric state of the whole body will always be especially felt in the lungs ; and, therefore, that an

hemorrhagy, as the effect of a general plethora, may be frequently occasioned in the lungs, even though there be no fault in their conformation.

DCCLXI.

In some cases, perhaps, an hemorrhagy from the lungs, or an hemoptysis, does arise from the general plethoric state of the body; but an hemoptysis more frequently does, and may be expected to happen, from a faulty proportion between the capacity of the lungs and that of the rest of the body.

DCCLXII.

When such a disproportion takes place, it will be evident, that an hemoptysis will especially happen about the time that the body is approaching to its acmé; that is,
when

when the system of the aorta has arrived at its utmost extension and resistance, and when, therefore, the plethoric state of the whole must especially affect the lungs.

DCCLXIII.

Accordingly, it has been constantly observed, that the hemoptysis especially occurs about the time of the body's arriving at its acmé; but I must remark also, that the hemorrhagy may occur sooner or later, according as the balance between the vessels of the lungs, and those of the system of the aorta, happens to be more or less exactly adjusted to one another; and it may therefore often occur much later than the period mentioned, when that balance, though not quite even, is however not so ill adjusted, but that some other concurring causes are necessary to give it effect.

DCCLXIV.

It was anciently remarked by Hippocrates, and has been confirmed by modern observation, that the hemoptysis generally occurs in persons between the age of fifteen and that of five-and-thirty; that it may happen at any time between these two periods; but that it seldom happens before the former, or after the latter; and it may be proper here to inquire into the reason of these two limitations.

DCCLXV.

With respect to the first, the reason of it has been already explained in (DCCLXII. and DCCLXIII.).

With respect to the second limitation, I expect that the reason of it will be understood from the following considerations.

It has been already observed, that the extension and growth of the body require the plethoric state of the arterial system; and nature has provided for this, partly by the constitution of the blood being such, that a great portion of it is unfit to pass into the exhalants and excretories; partly by giving a certain density and resistance to the several exhalants and excretories thro' which the fluids might pass out of the red arteries; and partly, but especially, by a resistance in the veins to the free passage of the blood into them from the arteries.

DCCLXVI.

With respect to this last and chief circumstance, it appears from the experiments of Sir Clifton Wintringham, in his *Experimental Inquiry*, that the proportional density of the coats of the veins to that of the coats of the arteries, is greater in

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young

young than in old animals : From which it may be presumed, that the resistance to the passage of the blood from the arteries into the veins, is greater in young animals than in old ; and, while this resistance continues, the plethoric state of the arteries must be constantly continued and supported. As however the density of the coats of the vessels, consisting chiefly of a cellular texture, is increased by pressure ; so, in proportion as the coats of the arteries are more exposed to pressure by distention than those of the veins, the former, in the progress of the growth of the body, must increase much more in density than the latter ; and, therefore, the coats of the arteries, in respect of density and resistance, must come, in time, not only to be in balance with those of the veins, but to prevail over them : a fact which is sufficiently proved by the experiments of the above-mentioned ingenious author.

By

By these means, the proportional quantities of blood in the arteries and veins must change in the course of life. In younger animals, the quantity of blood in the arteries must be proportionally greater than in old ones ; but, by the increasing density of the arteries, the quantity of blood in them must be continually diminishing, and that in the veins be proportionally increasing, so as at length to be in a proportionally greater quantity than that in the arteries. When this change happens in the proportional quantities of the blood in the arteries and veins, it must be evident that the plethoric state of the arteries will be in a great measure taken off; and, therefore, that the arterial hemorrhagy is no longer likely to happen; but that, if a general plethoric state afterwards take place in the system, it must especially appear in the veins.

DCCLXVII.

The change I have mentioned to happen in the state of the arterial and venous systems, is properly supposed to take place in the human body about the age of thirty-five, when it is manifest that the vigour of the body, which depends so much upon the fullness and tension of the arterial system, no longer increases ; and therefore it is, that the same age is the period, after which the arterial hemorrhagy, hemoptysis, hardly ever appears. It is true, there are instances of the hemoptysis happening at a later period ; but it is for the reasons given (DCCLVIII.) which show that an hemorrhagy may happen at any period of life, from accidental causes forming congestions, independent of the state of the balance of the system at that particular period.

DCCLXVIII.

DCCLXVIII.

I have said, (DCCLXVI.), that if, after the age of thirty-five, a general and preternatural plethoric state occur, it must especially appear in the venous system ; and I must now observe, that this venous plethora may also give occasion to hemorrhagy.

DCCLXIX.

If a plethoric state of the venous system take place, it is to be presumed, that it will especially and in the first place affect the system of the vena portarum, in which the motion of the venous blood is more slow than elsewhere ; in which the motion of the blood is little assisted by external compression ; and in which, from the want of valves in the veins that form the vena portarum, the motion of the blood is little
assisted

assisted by the compression that is applied; while, from the same want of valves in those veins, the blood is more ready to regurgitate in them. Whether any regurgitation of the blood can produce an action in the veins, and which inverted, or directed towards their extremities, can force these, and occasion hemorrhagy, may perhaps be disputed: but it appears to me that an hemorrhagy, produced by a plethoric state of the veins, may be explained in another and more probable manner. If the blood be accumulated in the veins, from any interruption of its proper course, that accumulation must resist the free passage of the blood from the arteries into the veins. This again, must produce some congestion in the extremities of the red arteries, and therefore some increased action in them, which must be determined with more than usual force, both upon the extremities of the arteries, and upon the exhalants

halants proceeding from them ; and this force may occasion an effusion of blood, either by anastomosis, or rupture.

DCCLXX.

In this manner I apprehend the hemorrhoidal flux is to be explained, so far as it depends upon the state of the whole system. It appears most commonly to proceed from the extremities of the hemorrhoidal vessels, which, being the most dependent and distant branches of those veins that form the vena portarum, are therefore the most readily affected by every accumulation of blood in that system of veins, and consequently by any general plethora in the venous system.

DCCLXXI.

It is here to be observed, that I have
spoken

spoken of this hemorrhagy as proceeding from the hemorrhoidal vessels only, as indeed it most commonly does ; but it will be readily understood, that the same accumulation and resistance to the venous blood may, from various causes, affect many of the extremities of the vena portarum, which lie very superficially upon the internal surface of the alimentary canal, and give occasion to what has been called the *Morbus Niger* or *Melæna*.

DCCLXXII.

Another part, in which an unusually plethoric state of the veins may have particular effects, and occasion hemorrhagy, is the head. In this, the venous system is of a peculiar conformation, and such as seems intended by nature to give there a slower motion to the venous blood. If, therefore, the plethoric state of the venous system in
general,

general, which seems to increase as life advances, should at length increase to a great degree, it may very readily affect the venous vessels of the head, and produce there such a resistance to the arterial blood, as to determine this to be poured out from the nose, or into the cavity of the cranium. The special effect of the latter effusion will be, to produce the disease termed Apoplexy; and which, therefore, is properly named by Doctor HOFFMAN, *Hemorrhagia Cerebri* : and the explanation of its cause, which I have now given, explains well why it happens especially to men of large heads and short necks, and to men in the decline of life, when the powers promoting the motion of the blood are much weakened.

DCCLXXIII.

I have thus attempted to give the history
of

of the plethoric and hemorrhagic states of the human body, as they occur at the different periods of life ; and hope I have thereby explained, not only the nature of hemorrhagy in general, but also of the particular hemorrhagies which most commonly appear, and as they occur successively at the different periods of life.

S E C T. III.

Of the REMOTE CAUSES *of* HEMORRHAGY.

DCCLXXIV.

IN the explanation hitherto given, I have especially considered the predisposition to
hemor-

hemorrhagy ; but it is proper also, and even necessary, to take notice of the occasional causes, which not only concur with the predisponent, in exciting hemorrhagy, but may also sometimes be the sole causes of it.

DCCLXXV.

These occasional causes are,

1. External heat, which, by rarefying the blood, produces or increasestheplethoric state of the body ; and the same heat, as giving a stimulus to the whole system, must urge any particular determinations before established, still further, or may urge to excess any inequality, otherwise innocent ; so that, in either way, external heat may immediately excite hemorrhagies, to which there was a predisposition, or may form congestions where there were none before, and thereby occasion hemorrhagy.

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2. A considerable and sudden diminution of the weight of the atmosphere, which seems to occasion the same effects as heat, by producing also an expansion of the blood.

3. Whatever increases the force of the circulation, and thereby the velocity of the blood, may operate in the same manner as heat, in urging not only previous determinations with violence, but also in urging to excess inequalities, otherwise innocent. All violent exercise, therefore, and especially all violent efforts, which, not only by a larger and longer inspiration, but also by the simultaneous action of many muscles interrupting the free motion of the blood, impel it with unusual force into the extreme vessels more generally, and, according to the different postures of the body, and mode of the effort, into certain vessels more particularly.

Among the causes increasing the force

of the circulation, anger and other violent active passions are to be reckoned.

4. The violent exercise of particular parts of the body. If these are already affected with congestions, or liable to them, such exercise may be considered as a stimulus applied to the vessels of that particular part. Thus, any violent exercise of respiration may excite hemoptysis, or occasion its return.

5. The postures of the body increasing determinations, or ligatures occasioning accumulations of the blood in particular parts of the body.

6. A determination into certain vessels rendered habitual by the frequent repetition of hemorrhagy from them.

7. Cold, externally applied, as changing the distribution of the blood, and determining it in greater quantity into the internal parts.

S E C T. IV.

Of the CURE of HEMORRHAGY.

DCCLXXVI.

HAVING thus considered the proximate and remote causes of hemorrhagy in general, our next business is, to treat of the cure of the disease in the same manner.

In entering upon this subject, the first question which presents itself, is, Whether the cure of hemorrhagies ought to be attempted by art, or if they should be left to the conduct of nature?

DCCLXXVII.

DCCLXXVII.

The latter opinion was the favourite doctrine of the celebrated Dr STAHL, and his followers. They maintained, that the human body is much disposed to a plethoric state; and, consequently, to many disorders which nature endeavours to obviate and relieve by exciting hemorrhagy: that this, therefore, is often necessary to the balance and health of the system: that it is accordingly to be generally encouraged, sometimes solicited, and is not to be suppressed, unless when it goes to great excess, or happens in parts in which it may be dangerous.

DCCLXXVIII.

Much of this doctrine may be admitted. The human body, upon many occasions, becomes preternaturally plethoric; and

the dangerous consequences which might from thence be apprehended, seem to be obviated by an hemorrhagy taking place: and, further, the necessity of hemorrhagy often appears from hence, that the suppression of it seems to occasion many disorders.

All this seems to be just; but, in the conclusion drawn from it there is a fallacy.

DCCLXXIX.

It appears to me certain, that hemorrhagy, either upon its first attack, or upon its after recurrence, is never necessary to the health of the body, excepting upon the supposition, that the plethoric state which seems to require the evacuation, cannot be otherwise prevented or removed; and as I imagine it possible by other means to prevent or remove a plethoric state, so I
do

do not think that hemorrhagy is, in all cases, necessary. In general, I am of opinion that hemorrhagy is to be avoided,

1. Because it does not always happen in parts where it is safe.

2. Because often, while it does relieve a plethoric state, it may, at the same time, induce a very dangerous disease.

3. Because it may often go to excess, and either endanger life, or induce a dangerous infirmity.

And, lastly, Because it has a tendency to increase the plethoric state it was meant to relieve; to occasion its own recurrence, (DCCXXI.); and thereby to induce a habit, which, if left to the precarious and unequal operation of nature, may, from the frequent errors of this, be attended with much danger.

DCCLXXX.

It is further to be considered, that hemorrhagies do not always arise from the necessities of the system, but often proceed from incidental causes. It appears to me, that all hemorrhagies of the latter kind may be immediately suppressed, and the repetition of them, as it induces a plethora, and a habit not otherwise necessary, may be prevented with great advantage.

DCCLXXXI.

Upon the whole of this subject, I conclude, that every preternatural hemorrhagy, or, in other words, every one except that of the menses in females, is to be avoided, and especially the returns of it prevented; and I therefore now proceed to mention, how hemorrhagy, and its recurrences, may, and should be prevented.

DCCLXXXII.

DCCLXXXII.

From the principles delivered above, it will immediately appear, that the prevention, either of the first attacks, or of the returns of hemorrhagy, will chiefly, and in the first place, depend upon the preventing or removing any considerable degree of a plethoric state which may happen to prevail in the body. It is true, that, where the hemorrhagy depends upon the particular conformation of certain parts, rather than upon the general plethoric state of the whole ; the measures for removing or preventing the latter, may not always be sufficient for preventing hemorrhagy : but at the same time it must be evident, that determinations, in consequence of the conformation of particular parts, will always be urged more or less, in proportion to the greater or lesser degree of the plethoric state of the whole system ; and, therefore,

that, even in the cases depending upon particular conformation, the preventing or removing an unusually plethoric state, will always be a chief means of preventing hemorrhagy. It is further to be attended to, that there may be several inequalities in the balance of the system, which may have little or no effect unless when the system becomes preternaturally plethoric; and, therefore, that, in all cases, the preventing or removing of the plethoric state of the system, will be a chief means of preventing the first attacks, or the returns of hemorrhagy. It now, therefore, remains to explain, how the plethoric state of the system is to be prevented or removed.

DCCLXXIII.

The fluids of the human body are in continual waste by the excretions, but are commonly replaced by the aliments taken
in;

in; and if the quantity of aliments in any measure exceed that of the excretions, an increase of the quantity of the fluids of the body, or, in other words, a plethoric state, must necessarily arise. This, to a certain degree, is requisite for the growth of the body: but, even then, if the proportion of the aliments to the excretions, be greater than is suited to the growth of the body, and more certainly still, if, after the growth is completed, when an equality between the *ingesta* and the *excreta* should be established, the disproportion still continue, a preternaturally plethoric state must arise. In both cases, it is evident, that the plethora must be prevented or corrected by adjusting the *ingesta* and *excreta* to each other; which generally may be done, either by diminishing the *ingesta*, or by increasing the *excreta*. The former may be effected by the management of diet,
the

the latter by the management of exercise.

DCCLXXXIV.

The ingesta may be diminished, either by giving aliment in less quantity than usual, or by giving aliments of a less nutritious quality ; that is, aliments of a substance, which, under the same bulk and weight, contain less of a matter capable of being converted into animal fluids, and more of a matter ready to pass off by the excretions, and consequently less of a matter to be retained and accumulated in the vessels.

The choice of aliments suited to these purposes, must be left to be directed by the doctrines of the *Materia Medica*.

DCCLXXXV.

DCCLXXXV.

The increafing of the excreta, and thereby diminifhing the plethoric ftate of the fyftem, is to be obtained by increafing the exercife of the body ; and generally for adjusting the balance between the ingefta and excreta, and thereby obviating the plethoric ftate, it is neceffary that exercife, in a due meafure, be very constantly employed.

DCCLXXXVI.

The obferving abftinence, and the employment of exercife, for obviating or removing the plethoric ftate of the body, were formerly confidered pretty fully, when treating of the gout, (DXLVIII. to DLII.) ; fo that the lefs is neceffary to be faid here : and it is now only requifite to obferve, that the fame doubts, as in cafes of the gout, do not occur here with regard
to

to the safety of those measures, which, in a plethoric state of the body disposing to hemorrhagy, are always admissible and proper. Here, however, it is to be observed, that some choice in the mode of exercise is necessary, and that it should be different according to the particular determinations which may happen to prevail in the system. In general, in the case of plethora disposing to hemorrhagy, bodily exercise will always be hazardous, and gestation more commonly safe.

DCCLXXXVII.

Artificial evacuations may be employed to diminish the plethoric state of the body; and when, at any time, it has become considerable, and immediately threatens a disease, these evacuations should be made to the quantity that the symptoms seem to require. But it is constantly to be attended to,

to, that blood-lettings are improperly employed to prevent a plethora, as they have a tendency to increafe it (DCCXXI.); and as they require to be often repeated, and are thereby apt to induce a habit which may be attended with much danger.

DCCLXXXVIII.

While a plethora, and thereby the pre-disposition to hemorrhagy, is avoided, or removed, the other measures necessary for preventing the occurrence of this, are those for avoiding the remote causes. These have been enumerated in (DCCLXXV.); and the means of avoiding them, so far as within our power, are sufficiently obvious.

DCCLXXXIX.

Having thus mentioned the means of preventing either the first attacks, or the recurrence

currence of hemorrhagy ; I must next say how it is to be managed when it has actually come on.

DCCXC.

When an hemorrhagy has come on which appears to have arisen from a preternaturally plethoric state, or from some change in the balance of the sanguiferous system, no measures are to be immediately taken for suppressing it ; as we may expect, that, when the quantity of blood necessary for the relief of the system is poured out, the effusion will spontaneously cease.

DCCXCI.

In many cases, however, it may be suspected, that the quantity of blood poured out, is not exactly in proportion to the necessities of the system, either for relieving a
general

general plethora or a particular congestion, but that it is often to a greater quantity than these require. This we suppose to happen in consequence of an inflammatory diathesis prevailing, and of a febrile spasm being formed; and therefore it is in many cases proper, as well as for the most part safe, to moderate the evacuation, and, when it threatens to go to excess, to suppress it altogether.

DCCXCII.

An hemorrhagy may be moderated by avoiding any irritation that might concur to increase it; so that every part of the antiphlogistic regimen is to be observed; in particular external heat, both as it rarifies the fluids, and stimulates the solids, is to be carefully avoided: and, it is probable, that in all cases an hemorrhagy may be

safely moderated by cool air applied, and cold drink exhibited.

DCCXCIII.

A second means for the same purpose, is, the use of refrigerant medicines, and particularly of acids and nitre.

DCCXCIV.

A third means which has been frequently employed, is that of blood-letting. The propriety of this practice may be doubtful, as the quantity of blood poured out by the hemorrhagy, may be supposed to answer the purpose of an evacuation in any other way; and I am ready to allow, that the practice has been often superfluous, and sometimes hurtful, by making a greater evacuation than was necessary or safe. At the same time, I apprehend it is not for the
mere

mere purpose of evacuating, that blood-letting is to be practised in the cure of hemorrhagy; but that it is further necessary for taking off the inflammatory diathesis which prevails, and the febrile spasm that has been formed. Accordingly, in the case of hemorrhagy, when the pulse is not only frequent, but quick and full, and does not become softer or slower upon the flowing of the blood, and that the effusion is profuse, and threatens to continue so, it appears to me, that blood-letting may be necessary, and I have often found it useful. It seems probable also, that the particular circumstances of venesection may render it more powerful for taking off the tension and inflammatory irritation of the system, than any gradual flow from an artery.

DCCXCV.

That a spasm of the extreme vessels has

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a share in supporting hemorrhagy, appears to me probable from hence, that blistering has been often found useful in moderating and suppressing the disease.

DCCXCVI.

Do emetics and vomiting contribute to the cure of hemorrhagy? See Dr BRYAN ROBINSON on the virtues and power of medicines.

DCCXCVII.

When an hemorrhagy is very profuse, and seems to endanger life, or even threatens to induce a dangerous infirmity, it is agreed on all hands, that it is to be immediately suppressed by every means in our power ; and particularly, that, besides the means above mentioned for moderating the disease, astringents, internal or external where
the

the latter can be applied, are to be employed for suppreſſing it.

DCCXCVIII.

The internal aſtringents are either vegetable or foſſil.

The vegetable aſtringents are ſeldom very powerful in the cure of any hemorrhagies, except thoſe of the alimentary canal.

The foſſil aſtringents are more powerful ; but ſome choice amongſt the different kinds may be proper.

The chalybeates, ſo frequently employed, do not appear to me to be very powerful.

The preparations of lead are certainly more ſo, but are otherwiſe of ſo pernicious a quality, that they ſhould not be employed except in caſes of the utmoſt danger. The Tinctura Saturnina, or Antiphthifica, as it has been called, appears to be of little effi-

eacy; but whether from the small portion of lead which it contains, or from the state in which the lead is in it, I am uncertain.

The fossil astringent that appears to me the most powerful, and at the same time the most safe, is alum.

DCCXCIX.

External astringents, when they can be applied, are more effectual than the internal. The choice of these is left to the surgeons.

DCCC.

The most powerful of all astringents appears to me to be cold, which may be employed, either by applying cold water to the surface of the body, or by throwing it into the internal parts.

DCCCI.

DCCCI.

For suppressing hemorrhagies, many superstitious remedies and charms have been recommended, and pretended to have been employed with success. The seeming success of these, however, has been generally owing to the by-standers mistaking a spontaneous ceasing of the hemorrhagy for the effect of the remedy. At the same time, I believe, that those remedies may have been sometimes useful, by impressing the mind with horror, awe, or dread.

DCCCII.

Upon occasion of profuse hemorrhagies, opiates have been employed with advantage; and, when the fulness and inflammatory diathesis of the system have been previously taken off by the hemorrhagy

X 3

itself,

itself, or by blood-letting, I think opiates may be employed with safety.

DCCCIH.

For restraining hemorrhagy, ligatures have been applied upon the limbs, in the view of retarding the return of the venous blood from the extremities ; but they appear to me to be of uncertain and ambiguous use.

DCCCIH.

In the case of profuse hemorrhagies, no pains are to be taken to prevent a Deliquium Animi, or fainting, as the happening of this is often the most certain means of stopping the hemorrhagy.

DCCCV.

DCCCV.

Having thus delivered the general doctrine of hemorrhagy, I proceed to consider the particular cases of it. It may perhaps be remarked, that I have marked fewer of these than are commonly enumerated by the nosologists ; but my reasons for differing from these authors, must be left to a nosological discussion, to be entered into elsewhere more properly than here.

C H A P. II.

OF THE EPISTAXIS, OR HEMORRHAGY
OF THE NOSE.

DCCCVI.

THE state of the vessels upon the internal surface of the nose being such as already mentioned (DCCLVII.), renders an hemorrhagy from that, more frequent than from any other part of the body.

DCCCVII.

DCCCVII.

The blood commonly flows from one nostril only, and probably because an hemorrhagy from one vessel relieves the congestion in all the neighbouring vessels.

The blood flowing from both nostrils at the same time, shows commonly a more considerable disease.

DCCCVIII.

This hemorrhagy happens to persons of every constitution and temperament, but most frequently to those of a plethoric habit, and sanguine temperament. It happens to both sexes, but most frequently to the male.

DCCXCIX.

This hemorrhagy may occur at any time
of

of life ; but most commonly happens to young persons, owing to the state of the balance of the system peculiar to that age, as mentioned in (DCCLVI.)

DCCCX.

Although generally it happens to persons before they have arrived at their full growth, and more rarely afterwards ; yet sometimes it happens to persons after their acmé, and during the state of manhood : and it must then be imputed to an unusually plethoric state of the system ; to an habitual determination of the blood to the vessels of the nose ; or to the particular weakness of these.

DCCCXI

In all these cases the disease may be considered as an hemorrhagy purely arterial,

and depending upon an arterial plethora ; but it sometimes occurs in the decline of life, when probably it depends upon and may be considered as a mark of a venous plethora of the vessels of the head. See (DCCLXXII.)

DCCCXII.

This hemorrhagy happens also at any period of life, in certain febrile diseases, which are altogether or partly of an inflammatory nature, and which shew a particular determination of the blood to the vessels of the head. These diseases often admit of a solution by this hemorrhagy, when it may be properly termed *critical*.

DCCCXIII.

The disease sometimes comes on without any previous symptoms ; particularly,
when

when some external violence has a share in producing it. But, when it proceeds entirely from an internal cause, it is commonly preceded by headachs, redness of the eyes, a florid colour of the face, an unusual pulsation in the temples, a sense of fulness about the nose, and an itching of the nostrils. A bound belly, pale urine, coldness of the feet, and cold shivering over the whole body, are also sometimes among the symptoms that precede the disease.

DCCCXIV.

From the weakness of the vessels of the nose, the blood often flows from them without any considerable effort of the whole system, and therefore without any observable febrile disorder ; which, however, in many cases, is, in all its circumstances, very discernible.

DCCCXV.

DCCCXV.

An hemorrhagy of the nose happening to young persons, is, and may generally be, considered as a slight disease of little consequence, and hardly requiring any remedy. But, even in young persons, when it recurs very frequently, and is very copious, it will require particular attention, as it is to be considered as a mark of arterial plethora; and, as frequently returning, it may increase the plethoric state; which, in a more advanced stage of life, may give the blood a determination to parts from which the hemorrhagy would be more dangerous. All this will more particularly require attention, according as the marks of plethora, and of particular congestion, preceding the hemorrhagy, are more considerable; and as the flowing of the blood is attended with a more considerable degree of febrile disorder.

DCCCXVI.

DCCCXVI.

When the epistaxis happens to persons after their acmé, returning frequently, and flowing copiously, it is always to be considered as a dangerous disease, and as more certainly threatening the consequences mentioned in the last paragraph.

DCCCXVII.

When this hemorrhagy happens in the decline of life, it may be considered as in itself very salutary: but at the same time, it is to be considered as a mark of a very dangerous state of the system; that is, as a mark of a very strong tendency to a venous plethora in the vessels of the head: and I have accordingly observed it often followed by apoplexy, palsy, or such like diseases.

DCCCXVIII.

DCCCXVIII.

When an hemorrhagy from the nose happens in febrile diseases, as mentioned in (DCCCXII.), and is in pretty large quantity, it may be considered as critical and salutary; but it is very apt to be profuse, and even in this way dangerous.

It upon some occasions occurs during the eruptive fever of several exanthemata, and is in such cases sometimes salutary; but, if these exanthemata be accompanied with any putrid tendency, this hemorrhagy, like artificial blood-lettings, may have very bad effects.

DCCCXIX.

Having thus explained the several circumstances of epistaxis, I proceed to consider the management and cure of it. I use the expression of *management*, because it has
been

been usually thought to require no cure, but that nature should be allowed to throw out blood in this way very frequently; and as often as it appears to arise from internal causes, that is, from a state of the system supposed to require such evacuation.

DCCCXX.

I am however of opinion, for the reasons given in (DCCLXXIX.), that this disease is very seldom to be left to the conduct of nature; and that in all cases it should be moderated by keeping the patient in cool air; by giving cold drink; by keeping the body and head erect; by avoiding any blowing of the nose, speaking, or other irritation: and, when the blood has flowed for some time, without showing any tendency to cease, a profuse bleeding is to be prevented by measures employed to stop it,
such

such as pressing the nostril from which the blood flows, washing the face with cold water, or applying this to other parts of the body.

DCCCXXI.

Even in the case of young persons where the disease is least hazardous, and even in the first attacks, I judge such measures to be proper : but they will be still more proper if the disease frequently recurs without any external violence ; if the returns shall happen to persons of a habit disposed to be plethoric ; and, more particularly, if the marks of a plethoric state appear in the precedent symptoms. (DCCCXIII.).

DCCCXXII.

Even in young persons, if the bleeding be very profuse and long continued, and

more especially if the pulse become weak and the face pale, I apprehend it will be proper to suppress the hemorrhagy by every means in our power. See DCCXCVII. and following paragraphs.

DCCCXXIII.

Further, in the same case of young persons, when the returns of this hemorrhagy become frequent, and especially with the marks of a plethoric habit, I think it necessary to employ such a regimen as may prevent a plethoric state, (DCCCLXXXIII.—DCCCLXXXVII.). At the same time, care should be taken to avoid all circumstances which may determine the blood more fully to the vessels of the head, or prevent its free return from them ; and, by keeping an open belly, to make some derivation from them.

DCCCXXIV.

DCCCXXIV.

In adult persons, liable to frequent returns of the epistaxis, the whole of the measures proposed (DCCCXXIII.), are more certainly and freely to be employed. When, with the circumstances mentioned in DCCCXXII. the tendency to a profuse hemorrhagy appears, a bleeding at the arm may be proper, even in young persons; but, in the case of adults, it will be still more allowable, and even necessary.

DCCCXXV.

In persons of any age liable to frequent returns of this hemorrhagy, when the measures proposed in DCCCXVII. *te seq.* shall have been neglected, or, from peculiar circumstances in the balance of the system, shall have proved ineffectual, and the symptoms threatening hemorrhagy (DCCCXXXVIII.)

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shall

shall appear, it will then be proper, by blood-letting, cooling purgatives, and every part of the antiphlogistic regimen, to prevent the hemorrhagy, or at least to prevent its being profuse when it does happen.

DCCCXXVI.

In the circumstances just now mentioned (DCCCXXV.), the measures proposed are proper, and even necessary ; but it should at the same time be observed, that these are practised with much less advantage than those pointed out in DCCCXXIV. : because, though those suggested here may prevent the coming on of the hemorrhagy for the present, they certainly however dispose to the return of that plethoric state which required their being used, and there can be no proper security against returns of the disease, but by pursuing the means proposed in DCCCXXIII.

DCCCXXVII.

DCCCXXVII.

When the hemorrhagy of the nose happens to persons approaching to their full growth, and when its returns have been preceded by the symptoms DCCCXIII. it may be supposed, that, if the returns can be prevented by the measures proposed in DCCCXXV. these may be safely employed; as the plethoric state induced will be rendered safe, by the change which is soon to take place in the balance of the system. This, however, cannot be admitted; as the evacuations practised upon this plan will have all the consequences which, I have already observed, may follow the recurrence of the hemorrhagy itself.

DCCCXXVIII.

When the hemorrhagy of the nose shall be found to make its returns at nearly

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stated

stated periods, the measures for preventing it (DCCCXXV.) may be practised with greater certainty ; and, upon every repetition of blood-letting, by diminishing the quantity taken away, its tendency to induce a plethora may be in some measure avoided. When, indeed, the repetition of evacuations is truly unavoidable, the diminishing them upon every repetition is properly practised : but it is a practice of nice and precarious management, and should by no means be trusted to, so far as to supersede the measures proposed in DCCCXXV. wherever these can be admitted.

DCCCXXIX.

When the hemorrhagy of the nose happens in consequence of a venous plethora in the vessels of the head, as in DCCCLXXII. the flowing of the blood pretty largely may be allowed, especially when

when it happens after the suppression or ceasing of the menstrual or hemorrhoidal flux. But, though the flowing of the blood is, on its first occurring, to be allowed, there is nothing more proper than guarding against its returns. This is to be done not only by the measures proposed in DCCLXXXIII.*et seq.* but, as the effects of a plethoric state of the vessels of the head are very uncertain, so, upon any appearance of it, and especially upon any threatening of hemorrhagy, the plethora is to be removed, and the hemorrhagy to be obviated immediately by proper evacuations; as blood-letting, purging, and issues, or by restoring suppressed evacuations, where this can be done.

C H A P. III.

OF THE HEMOPTYSIS, OR HEMORRHAGY
FROM THE LUNGS.

S E C T. I.

Of the PHENOMENA *and* CAUSES *of* HEMOPTYSIS:

DCCCXXX.

WHEN, after some affection of the breast, blood is thrown out from the mouth, and is brought out with more or less of coughing, there can be no doubt that

that it comes from the lungs ; and this generally ascertains the disease of which I am now to treat. But there are cases in which the source of the blood spit out is uncertain ; and therefore, some other considerations to be mentioned hereafter, are often necessary to ascertain the existence of an hemoptysis.

DCCCXXI.

The blood-vessels of the lungs are more numerous than those of any other part of the body of the same bulk. These vessels, of the largest size, as they arise from the heart, are more immediately than in any other part subdivided into vessels of the smallest size ; and these small vessels spread out near to the internal surfaces of the bronchial cavities, are situated in a loose cellular texture, and covered by a tender membrane only : so that, considering how readily

readily and frequently these vessels are gorged with blood, we may understand why an hemorrhagy from them is, next to that of the nose, the most frequent of any; and particularly, why any violent shock given to the whole body so readily occasions an hemoptysis.

DCCCXXII.

An hemoptysis may be occasioned by external violence, at any period of life; and I have explained above (DCCLX.), why in adult persons, while the arterial plethora still prevails [in the system, that is, from the age of sixteen to that of five-and-thirty, an hemoptysis may at any time be produced, merely by a plethoric state of the lungs.

DCCCXXIII.

DCCCXXXIII.

But it has been also observed above, (DCCCLXI.), that an hemoptysis more frequently arises from a faulty proportion between the capacity of the vessels of the lungs and that of those of the rest of the body. Accordingly it is often a hereditary disease, which implies a peculiar and faulty conformation. And the disease also happens especially to persons who discover the smaller capacity of their lungs, by the narrowness of their chest, and by the prominence of their shoulders; which last is a mark of their having been long liable to a difficult respiration.

DCCCXXXIV.

With these circumstances also the disease happens especially to persons of a sanguine temperament; in whom particularly,
the

the arterial plethora prevails. It happens likewise to persons of a slender delicate make, of which a long neck is a mark; to persons of much sensibility, and irritability, and therefore of quick parts, whose bodies are generally of a delicate structure; to persons who have been formerly liable to frequent hemorrhagies of the nose; to persons who have suffered a suppression of any hemorrhagy they had formerly been liable to, the most frequent instance of which is in females who have suffered a suppression of their menstrual flux; and, lastly, to persons who have suffered the amputation of any considerable limb.

DCCCXXXV.

In most of these cases (DCCCXXXIV.), the disease happens especially to persons about the time of their coming to their
full

full growth, or soon after it, and this for the reasons fully set forth above.

DCCCXXXVI.

From all that has been said from DCCCXXXI. to DCCCXXXV. the predisponent cause of hemoptysis will be sufficiently understood, and the disease may happen from the mere circumstance of the predisponent cause arising to a considerable degree. In the predisposed, however, it is often brought on by the concurrence of various occasional and exciting causes. One of these, and perhaps a frequent one, is external heat ; which, even when in no great degree, will bring on the disease in spring, and the beginning of summer, while the heat rarifies the blood more than it relaxes the solids which had been before contracted by the cold of winter. Another exciting cause is a sudden diminution
of

of the weight of the atmosphere, especially when concurring with any effort in bodily exercise. This effort, too, alone, may often, in the predisposed, be the exciting cause; and, more particularly, any violent exercise of respiration. In short, in the predisposed, any degree of external violence also may bring on the disease.

DCCCXXXVII.

Occasioned by one or other of these causes (DCCCXXXVI.), the disease comes on with a sense of weight and anxiety in the chest, some uneasiness in breathing, some pain of the breast or other parts of the thorax, and some sense of heat under the sternum; and very often, before the disease appears, a saltish taste is perceived in the mouth.

DCCCXXXVIII.

DCCCXXXVIII.

Immediately before the appearance of blood, a degree of irritation is felt at the top of the larynx. To relieve this, a hawking is made, which brings up a little blood, of a florid colour, and somewhat frothy. The irritation returns ; and, in the same manner, more blood of a like kind is brought up, with some noise in the wind-pipe, as of air passing through a fluid.

DCCCXXXIX.

This is commonly the manner in which the hemoptysis begins ; but sometimes at the very first the blood comes up by coughing, or at least somewhat of coughing accompanies the hawking just now mentioned.

DCCCXL.

DCCCXL.

The blood iffuing is fometimes at firft in very fmall quantity, and foon difappears altogether: but, in other cafes, efpecially when it repeatedly occurs, it is in greater quantity, and frequently continues to appear at times for feveral days together. It is fometimes profufe; but rarely in fuch quantity as either by its excefs, or by its fudden fuffocation, to prove immediately mortal. It commonly either ceafes fpontaneoufly, or is ftopped by the remedies employed.

DCCCXLI.

When blood is thrown out from the mouth, it is not always eafy to determine from what internal part it proceeds; whether from the internal furface of the mouth itfelf, from the fauces, or adjoining cavities

ties of the nose, from the stomach, or from the lungs. It is, however, very necessary to distinguish the different cases; and, in most instances, it may be done by attending to the following considerations.

DCCCXLII.

When the blood spit out, proceeds from some part of the internal surface of the mouth itself, it comes out without any hawking or coughing; and generally, upon inspection, the particular source of it becomes evident.

DCCCXLIII.

When blood proceeds from the fauces, or adjoining cavities of the nose, it may be brought out by hawking, and sometimes by coughing, in the manner we have described in DCCCXXXVII. and DCCCXXXIX.;

so that, in this way, a doubt may arise concerning its real source. A patient often lays hold of these circumstances to please himself with the opinion of its coming from the fauces, and he may be allowed to do so: but a physician cannot readily be deceived, if he consider, that a bleeding from the fauces is more rare than one from the lungs; that the former seldom happens but to persons who have been before liable either to an hemorrhagy of the nose, or to some evident cause of erosion; and, in most cases, by looking into the fauces, the distillation of the blood, if it comes from thence, will be perceived.

DCCCXLIV.

When blood proceeds from the lungs, the manner in which it is brought up will commonly show from whence it comes: but, independent of that, there are many
circum-

circumstances which may concur to point it out, such as the period of life, the habit of body, and other marks of a predisposition (DCCCXXXIII.—DCCCXXXV.) ; and, together with these, the occasional causes (DCCCXXXVI.) having been immediately before applied.

DCCCXLV.

When vomiting accompanies the throwing out of blood from the mouth, as vomiting and coughing often mutually excite each other; so they may be frequently joined, and render it doubtful, whether the blood thrown out proceeds from the lungs or from the stomach. We may however generally decide, by considering, that blood does not so frequently proceed from the stomach as from the lungs: that blood proceeding from the stomach commonly appears in greater quantity, than

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when

when it proceeds from the lungs : that the blood proceeding from the lungs is usually of a florid colour, and mixed with a little frothy mucus only ; whereas the blood from the stomach is commonly of a darker colour, more grumous, and mixed with the other contents of the stomach : that the coughing or vomiting, according as the one or the other first arises in the cases in which they are afterwards joined, may sometimes point out the source of the blood ; and, lastly, that much may be learned from the circumstances and symptoms which have preceded the hemorrhagy.

Those which precede the hemoptysis, enumerated in DCCCXXXVII. are most of them evident marks of an affection of the lungs. And, on the other hand, the hematemesis, or issuing of blood from the stomach, has also its peculiar symptoms and circumstances preceding it ; as, for instance,

instance, some morbid affection of this organ, or at least some pain, anxiety, and sense of weight, referred distinctly to the region of the stomach. To all this may be added, that the vomiting of blood happens more frequently to females than to males; and to the former, in consequence of a suppression of their menstrual flux: and, by attending to all these considerations (DCCCXLII.—DCCCXLV.), the presence of the hemoptysis may commonly be sufficiently ascertained.

S E C T. II.

Of the CURE of HEMOPTYSIS.

DCCCXLVI.

THIS disease is sometimes attended with little danger; as, when it happens to females in consequence of a suppression of the menses; when, without any marks of a predisposition, it arises from external violence; or when, from whatever cause arising, it leaves behind it no cough, dysp-

dyspnœa, or other affection of the lungs. Even in such cases, however, a danger may arise from too large an wound being made in the vessels of the lungs ; from a quantity of red blood being left to stagnate in the cavity of the bronchia ; and particularly, from any determination of the blood being made into the vessels of the lungs, which, by renewing the hemorrhagy, may have dangerous consequences. In every instance therefore of hemoptysis, the effusion is to be moderated by the several means mentioned (DCCXCII. to DCCXCV).

DCCCXLVII.

These measures are especially necessary when the hemoptysis arises in consequence of predisposition ; and in all cases where there is the appearance of a large effusion, or where the hemorrhagy frequently re-

turns, the effusion is not only to be moderated, but to be entirely stopped, and the returns of it prevented by every means in our power. See DCCXCVII, and following.

DCCCXLVIII.

To stop an hemoptysis, or prevent the returns of it, two medicines have been frequently employed; neither of which I can approve of. These are, chalybeates, and the Peruvian bark. As both of them contribute to increase the phlogistic diathesis of the system, they can hardly be safe in any case of active hemorrhagy, and I have frequently found them hurtful.

DCCCXLIX.

As the hemoptysis which happens in consequence of predisposition, is always
attended

attended with a phlogistic diathesis; and, as the bad consequences of the disease are especially to be apprehended from the continuance of that diathesis; so this is to be industriously taken off by blood-letting, in greater or smaller quantity, and more or less frequently repeated, according as the symptoms shall direct. At the same time, cooling purgatives are to be employed, and every part of the antiphlogistic regimen is to be strictly enjoined. The refrigerants may also be administered; taking care, however, that the acids, and more especially the nitre, do not excite coughing.

DCCCL.

From what was observed in DCCXCV. it will appear, that blistering upon the breast or back may be a remedy of hemoptysis, when it is present; and that if-

fucs

fues in the fame places may be useful in preventing the recurrence of it when it has ceafed.

DCCCLI.

The avoiding of motion is generally a proper part of the antiphlogiftic regimen; and, in the hemoptyfis, nothing is more neceffary than avoiding bodily exercife: but fome kinds of geftation, as failing, and travelling in an eafy carriage on fmooth roads, have often proved a remedy.

DCCCLII.

Such is the treatment I can propofe for the hemoptyfis, confidered merely as an hemorrhagy: But when, in fpite of all our precautions, it continues to recur, it is often followed by an ulceration of the lungs, and

a phthifis pulmonalis. This, therefore, I must now proceed to confider; but, as it arifes alfo from other caufes befides the hæmoptifis, it must be treated of with a more general view.

C H A P.

C H A P. IV.

OF THE PHTHISIS PULMONALIS, OR
CONSUMPTION OF THE LUNGS.

S E C T. I.

Of the PHENOMENA *and* CAUSES *of the* PHTHISIS
PULMONALIS.

DCCCLIII.

THE Phthifis Pulmonalis I would define to be, An expectoration of pus or purulent matter from the lungs, attended with a hectic fever.

As

As this is the principal species of phthisis, I shall frequently in this chapter employ the general term of phthisis, though strictly meaning the phthisis pulmonalis.

DCCCLIV.

I have met with some instances of an expectoration of purulent matter, continuing for many years, accompanied with very few symptoms of hectic, and at least without any hectic exquisitely formed: but, in none of these instances, were the persons so entirely free from symptoms of hectic, as to form any exception to the general definition.

DCCCLV.

In every instance of an expectoration of pus, I presume there is an ulceration of the lungs. The late Mr de Haen is the
only

only author that I know of who has advanced another opinion, and has supposed, that pus may be formed in the blood-vessels, and be from thence poured into the bronchiæ. Admitting his fact, I have attempted an explanation of the appearance of pus without ulceration in CCCXLIX.: but, after all, I cannot help suspecting the accuracy of his observations; must entirely reject his explanation of them; must however allow, that we still want facts to support the explanation I have offered; and doubt much if it will apply to any case of phthisis. For these reasons I still conclude, agreeably to the faith of all other dissections, and the opinions of all physicians, that the symptoms mentioned in our definition depend always upon an ulceration formed in the lungs.

DCCCLVI.

It has sometimes happened, that a catarrh was attended with an expectoration of a matter so much resembling pus, that physicians have been often uncertain whether it was mucus or pus, and therefore whether the disease was a catarrh or a phthisis. It is often of consequence to determine these questions ; and it appears to me that it may be generally done, with sufficient certainty, from the following considerations, of which each particular is not always singly decisive, but when they are taken together can hardly deceive us.

1. From the colour of the matter ; as mucus is naturally transparent, and pus always opaque. When mucus becomes opaque, as it sometimes does, it becomes white, yellow, or greenish ; but the last mentioned colour is hardly ever so remarkable in mucus as in pus.

2. From

2. From the consistence; as mucus is more viscid, and coherent, and pus less so, and may be said to be more friable. When mucus is thrown into water, it is not readily diffused, but remains united in uniform and circular masses: but pus, in the same circumstances, though not readily diffused, does not remain so uniformly united, and by a little agitation is broken into ragged fragments.

3. From the odour; which is seldom perceived in mucus, but frequently in pus. It has been proposed to try the odour of the matter expectorated, by throwing it upon live coals: but in such a trial both mucus and pus give out a disagreeable smell, and it is not easy to distinguish between them.

4. From the specific gravity compared with water; and, indeed, it is usual for the mucus of the lungs to swim on the surface of water, and for pus to sink in it. But in
this

this we may sometimes be deceived ; as pus which has entangled a great deal of air may swim, and mucus that is free from air may sink.

5. From the mixture which is discernible in the matter brought up: for if a yellow or greenish matter appears surrounded with a quantity of transparent or less opaque and less coloured matter, the more strongly coloured matter may be generally considered as pus ; as it is not easy to understand how one portion of the mucus of the lungs can be very considerably changed, while the rest of it is very little so, or remains in its ordinary state.

6. From the admixture of certain substances with the matter thrown out from the lungs. To this purpose we are informed by the experiments of the late Mr Charles Darwin : a. That the vitriolic acid dissolves both mucus and pus, but most readily the former : That, if water be added

to such a solution of mucus, this is separated, and either swims on the surface, or, divided into flocculi, is suspended in the liquor; whereas, when water is added to a like solution of pus, this falls to the bottom, or by agitation is diffused so as to exhibit an uniformly turbid liquor. b. That a solution of the caustic fixed alkali, after some time, dissolves mucus, and generally pus; and, if water be added to such solutions, the pus is precipitated, but the mucus is not. From such experiments it is supposed, that pus and mucus may be certainly distinguished from each other.

7. From the expectoration's being attended with a hectic fever. A catarrh, or expectoration of mucus, is often attended with fever; but never, so far as I have observed, with such a fever as I am presently to describe as a hectic. This, in my opinion, is the most certain mark of a purulent state in some part of the body; and if
others

others have thought differently, I am persuaded that it has been owing to this, that, presuming upon the mortal nature of a confirmed or purulent phthisis, they have considered every case in which a recovery happened, as a catarrh only: but, that they may have been mistaken in this, shall be shown hereafter.

DCCCLVII.

Having thus considered the first part of the character of the phthisis pulmonalis as a mark of an ulceration of the lungs; and having just now said, that the other part of the character, that is, the hectic fever, is a mark or indication of the same thing; it is proper now to consider this here, as I had with that view omitted it before (LXXIV.).

DCCCLVIII.

A hectic fever has the form of a remittent, which has exacerbations twice every day. The first of these occurs about noon, sometimes a little sooner or later; and a slight remission of it happens about five afternoon. This last is soon succeeded by another exacerbation, gradually increasing till after midnight: but after two o'clock of the morning, a remission takes place, which becomes more and more considerable as the morning advances. The exacerbations are frequently attended with some degree of cold shivering; or at least, the patient is exceedingly sensible to any coolness of the air, seeks external heat, and often complains of a sense of cold, when, to the thermometer, his skin is preternaturally warm. Of these exacerbations, that of the evening is always the most considerable.

DCCCLIX.

DCCCLIX.

It has commonly been given as a part of the character of a hectic fever, that an exacerbation of it commonly appears after the taking food; and it is true that dinner, which is taken at noon or after it, does seem to occasion some exacerbation. But this must not make us judge the mid-day exacerbation to be the effect of eating only; for I have often observed it to come on an hour before noon, and often some hours before dinner; which, in this country at present, is not taken till some time after noon. It is indeed to be observed, that in almost every person, the taking food occasions some degree of fever: But I am persuaded this would not appear so considerable in a hectic, were it not that an exacerbation of fever is present from another cause; and accordingly, the taking food in the morning has hardly any sensible effect.

DCCCLX.

I have thus described the general form of hectic fever ; but many circumstances attending it, are further to be taken notice of.

The fever I have described does not commonly subsist long, till the evening exacerbations become attended with sweatings ; which continue to recur, and to prove more and more profuse, through the whole course of the disease.

Almost from the first appearance of the hectic, the urine is high-coloured, and deposits a copious branny red sediment, which hardly ever falls close to the bottom of the vessel.

In the hectic, the appetite for food is generally less impaired than in any other kind of fever.

The thirst is seldom considerable ; the mouth is commonly moist ; and as the disease
case

ease advances, the tongue becomes free from all fur, appears very clean; and in the advanced stages of the disease, the tongue and fauces appear to be somewhat inflamed, and become more or less covered with aphthæ.

As the disease advances, the red vessels of the adnata of the eye disappear, and the whole of the adnata becomes of a pearly white.

The face is commonly pale; but, during the exacerbations, a florid red, and an almost circumscribed spot, appear on each cheek.

For some time, in the course of a hectic, the belly is bound; but, in the advanced stages of it, a diarrhoea almost always comes on, and continues to recur frequently during the rest of the disease, alternating in some measure with the sweatings mentioned above.

The disease is always attended with a

debility, which gradually increases during the course of it.

During the same course an emaciation takes place, and goes to a greater degree than in almost any other case.

The falling off of the hairs, and the adunque form of the nails, are also symptoms of the want of nourishment.

Towards the end of the disease, the feet are often affected with œdematous swellings.

The exacerbations of the fever are seldom attended with any headach, and scarcely ever with delirium.

The senses and judgment commonly remain entire to the very end of the disease; and the mind, for the most part, is confident and full of hope.

Somedays before death, a delirium comes on, and commonly continues to the end.

DCCCLXI.

The hectic fever now described (DCCCLVIII, DCCCLX.) as accompanying a purulent state of the lungs, is perhaps the case in which it most frequently appears: but I have never seen it in any case, when there was not evidently, or when I had not ground to suppose, there was a permanent purulency or ulceration in some external or internal part. It was for this reason that in LXXIV. I concluded it to be a symptomatic fever only. Indeed, it appears to me to be always the effect of an acrimony absorbed from abscesses or ulcers, although it is not equally the effect of every sort of acrimony; for the scorbutic and cancerous kinds often subsist long in the body without producing a hectic. What is the precise state of the acrimony producing this I cannot determine, but it seems to be chiefly that of a vitiated purulency.

DCCCLXII.

DCCCLXII.

However this may be, it appears, that the hectic's depending in general upon an acrimony, explains its peculiar circumstances. The febrile state seems to be chiefly an exacerbation of that frequency of the pulse, which occurs twice every day to persons in health, and may be produced by acrimony alone. These exacerbations, indeed, do not happen without the proper circumstances of pyrexia; but the spasm of the extreme vessels in a hectic does not seem to be so considerable as in other fevers: and hence the state of sweat and urine which appears so early and so constantly in hektics. Upon the same supposition of an acrimony corrupting the fluids, and debilitating the moving powers, I think that most of the other symptoms may also be explained.

DCCCLXIII.

DCCCLXIII.

Having thus considered the characteristic symptoms and chief part of the proximate cause of the phthisis pulmonalis, I proceed to observe, that an ulcer of the lungs, and its concomitant circumstance of hectic fever, may arise from different previous affections of the lungs: all of which however may, in my opinion, be referred to five heads; that is, 1. To an hemoptysis; 2. To a suppuration of the lungs in consequence of pneumonia; 3. To catarrh; 4. To asthma; or, 5. To a tubercle. These several affections, as causes of ulcers, shall now be considered in the order mentioned.

DCCCLXIV.

It has been commonly supposed, that an hemoptysis was naturally, and almost necessarily

cessarily, followed by an ulcer of the lungs; but I will presume to say, that, in general, this is a mistake; for there have been many instances of hemoptysis occasioned by external violence, without being followed by any ulcer of the lungs; and there have also been many instances of hemoptysis from an internal cause, without any consequent ulceration. And this too has been the case, not only when the hemoptysis happened to young persons, and recurred for several times, but when it has often recurred during the course of a long life. It is indeed easy to conceive, that a rupture of the vessels of the lungs, like that of the vessels of the nose, may be often healed, as the surgeons speak, by the first intention. It is probable therefore, that it is an hemoptysis in particular circumstances only, which is necessarily followed by an ulcer; but what these circumstances are, it is difficult to determine.

It

It is possible, that merely the degree of rupture, or frequently repeated rupture preventing the wound from healing by the first intention, may occasion an ulcer ; or it is possible that red blood effused, and not brought up entirely by coughing, may, by stagnating in the bronchiæ, become acrid, and erode the parts. These however are but suppositions, not supported by any clear evidence. And, if we consider that those cases of hemoptysis which follow the predisposition (DCCCXXXII.—DCCCXXXV.) are those especially which end in phthisis, we shall be led to suspect that there are some other circumstances which concur here to determine the consequence of hemoptysis, as I shall hereafter endeavour to show.

DCCCLXV.

Any supposition, however, which we can
make

make with respect to the innocence of an hæmoptysis, must not supersede the measures proposed above for its cure: both because we cannot certainly foresee what may be the consequences of such an accident, and because the measures above suggested are safe; for, upon every supposition, it is a diathesis phlogistica that may urge on every bad consequence to be apprehended.

DCCCLXVI.

The second cause of an ulceration of the lungs, to be considered, is a suppuration formed in consequence of pneumonia.

DCCCLXVII.

From the symptoms mentioned in DCCCLVIII.—DCCLIX, it may with reason

son be concluded, that an abscess, or, as it is called, a *vomica*, is formed in some part of the pleura, and most frequently in that portion of it investing the lungs. Here purulent matter frequently remains for some time, as if inclosed in a cyst: but commonly it is not long before it comes to be either absorbed, and transferred to some other part of the body; or that it breaks through into the cavity of the lungs, or into that of the thorax. In the latter case, it produces the disease called *empyema*; but it is only when the matter is poured into the cavity of the bronchiæ, that it properly constitutes the phthisis pulmonalis. In the case of empyema, the chief circumstances of a phthisis are indeed also present; but I shall here consider that case only in which the abscess of the lungs gives occasion to a purulent expectoration.

DCCCLXVIII.

An abscess of the lungs, in consequence of pneumonia, is not always followed by a phthisis : for sometimes a hectic fever is not formed ; the matter poured into the bronchiæ is a proper and benign pus, which is frequently coughed up very readily, and spit out : and, though this purulent expectoration should continue for some time, yet if a hectic does not come on, the ulcer soon heals, and every morbid symptom disappears. This has happened so frequently, that we may conclude, that neither the access of the air, nor the constant motion of the lungs, will prevent an ulcer of these parts from healing, if the matter of it be well-conditioned. An abscess of the lungs, therefore, does not necessarily produce the phthisis pulmonalis ; and if it be followed by such a disease, it must be in consequence of particular circumstances which

which corrupt the purulent matter produced, render it unfuitable to the healing of the ulcer, and at the same time make it afford an acrimony, which, being absorbed, produces a hectic and its consequences.

DCCCLXIX.

The corruption of the matter of such abscesses may be owing to several causes; as, 1. That the matter effused during the inflammation, had not been a pure serum fit to be converted into a laudable pus, but had been united with other matters which prevented that, and gave a considerable acrimony to the whole: Or, 2. That the matter effused, and converted into pus, either merely by a long stagnation in a vomica, or by its connection with an empyema, had been so corrupted as to become unfit for the purpose of pus, in the healing of the ulcer. These seem to be

possible causes of the corruption of matter in abscesses, so as to make it the occasion of a phthisis in persons otherwise sound; but it is probable, that a pneumonic abscess does especially produce phthisis when it happens to persons previously disposed to that disease, and therefore only as it concurs with some other causes of it.

DCCCLXX.

The third cause supposed to produce phthisis, is a catarrh; which in many cases seems, in length of time, to have the expectoration of mucus proper to it, gradually changed into an expectoration of pus; and at the same time, by the addition of a hectic fever, the disease, which was at first a pure catarrh, is converted into a phthisis. This supposition, however, is not easily to be admitted. The catarrh is properly an affection of the mucous glands

glands of the trachea and bronchiæ, analogous to the coryza, and less violent kinds of cynanche tonsillaris, which very seldom terminate in suppuration. And although a catarrh should be disposed to such termination, yet the ulcer produced might readily heal up, as it does in the case of a cynanche tonsillaris ; and therefore should not produce a phthisis.

DCCCLXXI.

Further, the catarrh, as purely the effect of cold, is generally a mild disease, as well as of short duration ; and of the numerous instances of it, there are at most but very few cases which can be said to have ended in phthisis. In all those cases in which this seems to have happened, it is to me probable, that the persons affected were peculiarly predisposed to phthisis. And the beginning of phthisis so often resembles a

catarrh, that the former may have been mistaken for the latter. Besides, to increase the fallacy, it often happens that the application of cold, which is the most frequent cause of catarrh, is also frequently the exciting cause of the cough which proves the beginning of phthisis.

DCCCLXXII.

It is to me, therefore, probable, that a catarrh is very seldom the foundation of phthisis ; but I would not positively assert that it never is so : for it is possible that the cases of a more violent catarrh may have joined with them a pneumonic affection, which may end in a suppuration ; or it may happen that a long continued catarrh, by the violent agitation of the lungs in coughing, will produce some of those tubercles which are presently to be mentioned.

tioned as the most frequent cause of phthisis.

DCCCLXXIII.

It must be particularly observed here, that nothing said in DCCCLXXII. should allow us to neglect any appearance of catarrh, as is too frequently done; for it may be either the beginning of a phthisis, which is mistaken for a genuine catarrh, or that even as a catarrh continuing long, it may produce a phthisis, as in DCCCLXXII.

DCCCLXXIV.

Many physicians have supposed an acrimony of the fluids eroding some of the vessels of the lungs, to be a frequent cause of ulceration and phthisis. But this appears to me to be a mere supposition: for, in any of the instances of the production of phthisis

sis which I have seen, there was no evidence of any acrimony of the blood capable of eroding the vessels. It is true, indeed, that in many cases an acrimony subsisting in some part of the fluids, is the cause of the disease ; but it is at the same time probable, that this acrimony operates by producing tubercles, rather than by any direct erosion.

DCCCLXXV.

It has been mentioned in DCCCLXIII. that an asthma may be considered as one of the causes of phthisis ; and by asthma I mean, that species of it which has been commonly named the Spasmodic. This disease frequently subsists very long without producing any other, and may have its own peculiar fatal termination, as shall be explained hereafter. But I have seen it frequently end in phthisis ; and in such cases

I

I suppose it to operate in the manner above alledged of catarrh, that is, by producing tubercles, and their consequences, which shall be presently mentioned.

DCCCLXXVI.

I come now to consider the fifth head of the causes of phthisis, and which I apprehend to be the most frequent of any. This I have said, in general, to be tubercles; by which term are meant, certain small tumours, which have the appearance of indurated glands. Dissections have frequently shown such tubercles formed in the lungs; and although at first indolent, yet at length they become inflamed, and are thereby changed into little abscesses, or vomicæ, which breaking, and pouring their matter into the bronchiæ, give a purulent expectoration, and thus lay the foundation of phthisis.

DCCCLXXVII.

Though the matter expectorated upon these occasions has the appearance of pus, it is seldom that of a laudable kind ; and, as the ulcers do not readily heal, but are attended with a hectic fever, for the most part ending fatally, I presume that the matter of the ulcers is imbued with a peculiarly noxious acrimony, which prevents their healing, and produces a phthisis in all its circumstances, as mentioned above.

DCCCLXXVIII.

It is very probable that the acrimony which thus discovers itself in the ulcers, existed before and produced the tubercles themselves ; and it is to this acrimony that we must trace up the cause of the phthisis following these tubercles. This acrimony

is probably, in different cases, of different kinds; and it will not be easy to determine its varieties: but to a certain length I shall attempt it.

DCCCLXXIX.

In one case, and that, too, a very frequent one, of phthisis, it appears, that the noxious acrimony is of the same kind with that which prevails in the scrophula. This may be concluded from observing, that a phthisis, at its usual periods, frequently attacks persons born of scrophulous parents; that is, of parents who had been affected with scrophula in their younger years: that very often, when the phthisis appears, there occur at the same time some lymphatic tumours in the external parts; and very often I have found the *tabes mesenterica*, which is a scrophulous affection, joined with the *phthisis pulmonalis*. To
all

all this I would add, that, even when no scrophulous affection has either manifestly preceded or accompanied a phthisis, this last however most commonly affects persons of a habit resembling the scrophulous; that is, persons of a sanguine, or of a sanguineo-melancholic temperament, who have very fine skins, rosy complexions, large veins, soft flesh, and thick upper-lip: and further, that in such persons the phthisis comes on in the same manner that it does in persons having tubercles, as shall be immediately explained.

DCCCLXXX.

Another species of acrimony producing tubercles of the lungs, and thereby phthisis, may be said to be the exanthematic. It is well known, that the small-pox sometimes, and more frequently the measles, lay the foundation of phthisis. It is probable
also,

also, that other exanthemata have the same effect; and from the phenomena of the disease, and the dissections of persons who have died of it, it is probable, that all the exanthemata may occasion a phthisis, by affording a matter which in the first place produces tubercles.

DCCCLXXXI.

Another acrimony, which seems sometimes to produce phthisis, is the siphylitic: but whether such an acrimony produces phthisis in any other persons than the previously disposed, does not appear to me certain.

DCCCLXXXII.

What other species of acrimony, such as from scurvy, from pus absorbed from other parts of the body, from suppressed eruptions,

tions, or from other sources, may also produce tubercles and phthisis, I cannot now decide, but must leave to be determined by those who have had experience of such cases.

DCCCLXXXIII.

There is one peculiar case of phthisis, which from my own experience I can take notice of. This is the case of phthisis from a calcareous matter formed in the lungs, and coughed up, frequently with a little blood, sometimes with mucus only, and sometimes with pus. How this matter is generated, or in what precise part of the lungs it is seated, I acknowledge myself ignorant. In three cases of this kind which have occurred to me, there was at the same time no appearance of stony or earthy concretions in any other part of the body. In one of these cases, an exquisitely
formed

formed phthisis came on, and proved mortal: while in the other two, the symptoms of phthisis were never fully formed; and after some time, merely by a milk diet and avoiding irritation, the patients entirely recovered.

DCCCLXXXIV.

Another foundation for phthisis, analogous, as I judge, to that of tubercles, is that which occurs to certain artificers whose employments keep them almost constantly exposed to dust; such as stone-cutters, millers, flax-dressers, and some others. I have not observed in this country many instances of phthisis which could be referred to this cause; but, from RAMAZZINI, MORGAGNI, and some other writers, we must conclude such cases to be more frequent in the southern parts of Europe.

DCCCLXXXV.

DCCCLXXXV.

Besides those now mentioned, there are probably some other causes producing tubercles, which have not yet been ascertained by observation ; and it is likely, that in the state of tubercles there is a variety not yet accounted for : but all this must be left to future observation and inquiry.

DCCCLXXXVI.

It has been frequently supposed by physicians, that the phthisis is a contagious disease ; and I dare not assert that it never is such : but in many hundred instances of the disease which I have seen, there has been hardly one which to me could appear to have arisen from contagion. It is possible, that in warmer climates the effects of contagion may be more discernible.

After having said that a phthisis arises
from

from tubercles more frequently than from any other cause, and after having attempted to assign the variety of these, I now proceed to mention the peculiar circumstances and symptoms which usually accompany the coming on of the disease from tubercles.

DCCCLXXXVII.

A tuberculous and purulent state of the lungs has been observed in very young children, and in some others at several different periods before the age of puberty and full growth; but instances of this kind are rare: and the attack of phthisis, which we have reason to impute to tubercles, usually happens at the same period which I have assigned for the coming on of the hemoptysis.

DCCCLXXXVIII.

DCCCLXXXVIII.

The phthisis from tubercles does also generally affect the same habits as the hemoptysis, that is, persons of a slender make, of long necks, narrow chests, and prominent shoulders : but very frequently the persons liable to tubercles have less of the florid countenance, and of the other marks of an exquisitely sanguine temperament, than the persons liable to hemoptysis.

DCCCLXXXIX.

This disease, arising from tubercles, usually commences with a slight and short cough, which becomes habitual, is often little remarked by those affected, and sometimes so little as to be absolutely denied by them. At the same time their breathing becomes easily hurried by any bodily motion, their body grows leaner, and they become

come languid and indolent. This state sometimes continues for a year, or even for two years, without the persons making any complaint of it, excepting only that they are affected by cold more readily than usual, which frequently increases their cough, and produces some catarrh. This, again, however, is sometimes relieved; is supposed to have arisen from cold alone; and therefore gives no alarm either to the patient or to his friends, nor leads them to take any precautions.

DCCCXC.

Upon one or other of these occasions of catching cold, as we commonly speak, the cough becomes more considerable; is particularly troublesome upon the patient's lying down at night, and in this state continues longer than is usual in the case of a simple catarrh. This is more especially to

call for attention, if the increase and continuance of cough come on during the summer season.

DCCCXCI.

The cough which comes on as in DCCCLXXXIX. is very often for a long time without any expectoration ; but when, from repeatedly catching cold, it becomes more constant, it is then at the same time attended with some expectoration, which is most considerable in the mornings. The matter of this expectoration becomes by degrees more copious, more viscid, and more opake ; at length of a yellow or greenish colour, and of a purulent appearance. The whole of the matter, however, is not always at once entirely changed in this manner ; but, while one part of it retains the usual form of mucus, another suffers the changes now described.

DCCCXCII.

DCCCXCII.

When the cough increafes, and continues very frequent through the night, and when the matter expectorated undergoes the changes I have mentioned, the breathing at the fame time becomes more difficult, and the emaciation and weaknefs go on alfo increafing. In the female fex, as the difeafe advances, and fometimes early in its progrefs, the menfes ceafe to flow; and this circumftance is to be confidered as commonly the effect, although the fex themfelves are ready to believe it the fole caufe, of the difeafe.

DCCCXCIII.

When the cough comes on as in DCCCLXXXIX. the pulse is often natural, and for fome time after continues to be fo; but the fymptoms have feldom fub-

C c 2

fifted

sisted long before the pulse becomes frequent, and sometimes to a considerable degree, without much of the other symptoms of fever. At length, however, evening exacerbations become remarkable; and by degrees the fever assumes the exquisite form of hectic, as described in DCCCLVIII.—DCCCLX.

DCCCXCIV.

It is seldom that the cough, expectoration, and fever, go on increasing, in the manner now described, without some pain being felt in some part of the thorax. It is usually and most frequently felt at first under the sternum, and that especially, or almost only, upon occasion of coughing: but very often, and that too early, in the course of the disease, a pain is felt on one side, sometimes very constantly, and so as to prevent the person from lying easily upon that side; but

but at other times the pain is felt only upon a full inspiration, or upon coughing. Even when no pain is felt, it generally happens that phthifical persons cannot lie easily on some one of their fides without having their difficulty of breathing increafed, and their cough excited.

DCCCXCV.

The phthifis begins, and fometimes proceeds to its fatal iffue, in the manner defcribed from DCCCLXXXIX. to DCCCXCV. without any appearance of hemoptyfis. Such cafes are, indeed, rare; but it is very common for the difeafe to advance far, and even to an 'evident purulency and hec̃tic ftate, without any appearance of blood in the fputting: fo that it may be affirmed, the difeafe is frequently not founded in hemoptyfis. At the fame time, we muft allow, not only that it fometimes begins with

an hemoptysis, as is said in DCCCLXIV.; but further, that it seldom happens that in the progress of the disease more or less of an hemoptysis does not appear. Some degree of blood-spitting does, indeed, appear sometimes in the state mentioned DCCCLXXXIX. DCCCXCIII. but more commonly in the more advanced stages of the disease only, and particularly upon the first appearance of purulency. However this may be, it is seldom, in the phthisis from tubercles, that the hemoptysis is considerable, or requires any remedies different from those which are otherwise necessary for the state of the tubercles.

DCCCXCVI.

I have now described a succession of symptoms which, in different cases, occupy more or less time. In this climate they very often take up some years, the symptoms

toms appearing especially in the winter and spring; commonly becoming easier, and sometimes almost disappearing, during the summer: but returning again in winter, they at length, after two or three years, prove fatal, towards the end of spring or beginning of summer.

DCCCXCVII.

In this disease, the prognosis is for the most part unfavourable. Of those affected with it, the greater number die; but there are also many of them who recover entirely, after having been in very unpromising circumstances. What are, however, the circumstances more certainly determining to a happy or to a fatal event, I have not yet been able to ascertain.

DCCCXCVIII.

The following aphorisms are the result of my observations.

A phthisis pulmonalis from hemoptysis, is more frequently recovered than one from tubercles.

An hemoptysis not only is not always followed by a phthisis, as we have said above (DCCCLXIV.) ; but even when followed by an ulceration, the ulceration is sometimes attended with little of hectic, and frequently admits of being soon healed. Even when the hemoptysis and ulceration have happened to be repeated, there are instances of persons recovering entirely after several such repetitions.

A phthisis from a suppuration in consequence of pneumonic inflammation, is that which most rarely occurs in this climate ; and a phthisis does not always follow such suppuration, when the abscess formed
soon

soon breaks and discharges a laudable pus: but, if the abscess continue long shut up, and till after a considerable degree of hectic has been formed, a phthisis is then produced, equally dangerous, as that from other causes.

A phthisis from tubercles has, I think, been recovered: but it is of all others the most dangerous; and, when arising from a hereditary taint, is almost certainly fatal.

The danger of a phthisis, from whatever cause it may have arisen, is most certainly to be judged of by the degree to which the hectic and its consequences have arrived. From a certain degree of emaciation, debility, profuse sweating, and diarrhœa, no person recovers.

A mania coming on, has been found to remove all the symptoms, and sometimes has entirely cured the disease; but, in other cases,

cases, upon the going off of the mania, the phthisis has recurred, and proved fatal.

The pregnancy of women has often retarded the progress of a phthisis; but commonly it is only till after delivery, when the symptoms of phthisis return with violence, and soon prove fatal.

S E C T.

S E C T. II.

Of the CURE of PHTHISIS.

DCCCXCIX.

FROM what has been just now said, it will readily appear, that the cure of the phthisis pulmonalis must be exceedingly difficult; and that even the utmost care and attention in the employment of remedies, have seldom succeeded. It may be doubtful whether this failure is to be imputed to the imperfection of our art, or to the absolutely incurable nature of the disease.

ease. I am extremely averse in any case to admit of the latter supposition, and can always readily allow of the former; but, in the mean time, must mention here, what has been attempted towards either curing or moderating the violence of this disease.

DCCCC.

It must be obvious, that according to the different circumstances of this disease, the method of cure must be different. Our first attention should be employed in watching the approach of the disease, and preventing its proceeding to an incurable state.

In all persons of a phthifical habit, and especially in those born of phthifical parents, the slightest symptoms of the approach of phthisis, at the phthifical period of life, ought to be attended to.

DCCCCI.

DCCCCI.

When an hemoptysis occurs, though it be not always followed with ulceration and phthisis, these however are always to be apprehended ; and every precaution is to be taken against them. This is especially to be done by employing every means of moderating the hemorrhagy, and of preventing its return, directed in DCCCXCII. *et seq.* ; and these precautions ought to be continued for several years after the occurrence of the hemoptysis.

DCCCXCII.

The phthisis which follows a suppuration from pneumonic inflammation, can only be prevented with certainty, by obtaining a resolution of such inflammation. What may be attempted towards the cure of an
abscess

abscess and ulcer which have taken place, I shall speak of hereafter.

DCCCCIII.

I have said, it is doubtful if a genuine catarrh ever produces a phthisis; but have allowed that it possibly may: and both upon this account, and upon account of the ambiguity which may arise, whether the appearing catarrh be a primary disease, or the effect of a tubercle, I consider it as of consequence to cure a catarrh as soon as possible after its first appearance. More especially when it shall linger, and continue for some time, or shall, after some intermission, frequently return, the cure of it should be diligently attempted. The measures requisite for this purpose shall be mentioned afterwards, when we come to treat of catarrh as a primary disease; but, in the mean time, the means necessary

fary for preventing its producing a phthisis shall be mentioned immediately, as they are the same with those I shall point out as necessary for preventing a phthisis from tubercles.

DCCCCIV.

The preventing of a phthisis from asthma must be, by curing, if possible, the asthma, or at least by moderating it as much as may be done : and as it is probable that asthma occasions phthisis, by producing tubercles, the measures necessary for preventing phthisis from asthma, will be the same with those necessary in the case of tubercles, which I am now about to mention.

DCCCCV.

I consider tubercles as by much the most
fre-

frequent cause of phthisis ; and even in many cases where this seems to depend upon hemoptysis, catarrh, or asthma, it does however truly arise from tubercles. It is upon this subject, therefore, that I shall have occasion to treat of the measures most commonly requisite for curing phthisis.

DCCCCVI.

When, in a person born of phthisical parents, of a phthisical habit, at the phthisical period of life, the symptoms (DCCCLXXXIX.) in the spring, or beginning of summer, shall appear in the slightest degree, we may presume that a tubercle, or tubercles, either have been formed, or are forming in the lungs ; and therefore, that every means we can devise for preventing their formation, or for procuring their resolution, should be employed immediately,

mediately, even although the patient himself should overlook or neglect the symptoms, as imputing them to accidental cold.

DCCCCVII.

This is certainly the general indication; but how it may be executed, I cannot readily say. I do not know that, at any time, physicians have proposed any remedy capable of preventing the formation of tubercles, or of resolving them when formed. The analogy of scrophula, gives no assistance in this matter. In scrophula the remedies that are seemingly of most power are, sea-water, or certain mineral waters; but these have generally proved hurtful in the case of tubercles of the lungs. I have known several instances of mercury very fully employed for certain diseases, in persons who were supposed at the time to

have tubercles formed, or forming, in their lungs ; but though the mercury proved a cure for those other diseases, it was of no service in preventing phthisis, and in some cases seemed to hurry it on.

DCCCCVIII.

Such appears to me to be the present state of our art, with respect to the cure of tubercles ; but I do not despair of a remedy for the purpose being found hereafter. In the mean time, all that at present seems to be within the reach of our art, is to take the measures proper for avoiding the inflammation of tubercles. It is probable that tubercles may subsist long without producing any disorder : and I am disposed to think, that nature sometimes resolves and discusses tubercles which have been formed ; but that nature does this only when the tubercles remain in an uninfamed

flamed state ; and therefore, that the measures necessary to be taken, are chiefly those for avoiding the inflammation of the tubercles.

DCCCCIX.

The inflammation of a tubercle of the lungs is to be avoided upon the general plan of avoiding inflammation, by blood-letting, and by an antiphlogistic regimen ; the chief part of which, in this case, is the use of a low diet. This supposes a total abstinence from animal-food, and the using of vegetable food almost alone : but it has been found, that it is not necessary for the patient to be confined to vegetables of the weakest nourishment, it being sufficient that the farinacea be employed, and together with these, milk.

DCCCCX.

Milk has been generally considered as the chief remedy in phthisis, and in the case of every tendency to it; but whether from its peculiar qualities, or from its being of a lower quality, with respect to nourishment, than any food entirely animal, is not certainly determined. The choice and administration of milk will be properly directed, by considering the nature of the milk of the several animals from which it may be taken, and the particular state of the patient with respect to the period and circumstances of the disease, and to the habits of his stomach with respect to milk.

DCCCCXI.

A second means of preventing the inflammation of the tubercles of the lungs,
is,

is, by avoiding any particular irritation of the affected part, which may arise from any violent exercise of respiration; from any considerable degree of bodily exercise; from any position of the body which straitens the capacity of the thorax; and, lastly, from cold applied to the surface of the body, which determines the blood in greater quantity to the internal parts, and particularly to the lungs.

DCCCCXII.

From the last-mentioned consideration, the application of cold in general, and therefore the winter-season, in cold climates, as diminishing the cutaneous perspiration, is to be avoided; but more particularly, that application of cold is to be shunned that may suppress perspiration, to the degree of occasioning a catarrh, which consists in an inflammatory determination

to the lungs, and may therefore most certainly produce an inflammation of the tubercles there.

By considering, that the avoiding heat is a part of the antiphlogistic regimen above recommended, and by comparing this with what has been just now said respecting the avoiding cold, the proper choice of climates and seasons for phthifical patients will be readily understood.

DCCCCXIII.

A third means of avoiding the inflammation of the tubercles of the lungs consists, in diminishing the determination of the blood to the lungs, by supporting and increasing the determination to the surface of the body ; which is to be chiefly and most safely done by warm cloathing, and the frequent use of the exercises of gestation.

DCCCCXIV.

DCCCCXIV.

Every mode of gestation has been found of use in phthifical cafes ; but riding on horseback, as being accompanied with a great deal of bodily exercise, is less safe in persons liable to an hemoptysis. Travel-ling in a carriage, unless upon very smooth roads, may also be of doubtful effect ; and all the modes of gestation that are employed on land, may fall short of the effects expected from them, because they cannot be rendered sufficiently constant ; and therefore it is that sailing, of all other modes of gestation, is the most effectual in pneumonic cafes, as being both the smoothest and most constant.

It has been imagined, that some benefit is derived from the state of the atmosphere upon the sea : but I cannot find that any impregnation of this which can be supposed to take place, can be of service to phthi-

fical persons. It is however probable, that frequently some benefit may be derived from the more moderate temperature and greater purity of the air upon the sea.

DCCCCXV.

In order to take off any inflammatory determination of the blood into the vessels of the lungs, blisters applied to some part of the thorax may often be of service; and for the same purpose, as well as for moderating the general inflammatory state of the body, issues of various kinds may be employed with advantage.

DCCCCXVI.

The several measures to be pursued in the case of what is properly called an Incipient Phthisis, have now been mentioned; but they have seldom been employed in
such

such cases in due time, and have therefore, perhaps, seldom proved effectual. It has more commonly happened, that after some time, an inflammation has come upon the tubercle, and an abscess has been formed, which opening into the cavity of the bronchiæ, has produced an ulcer, and a confirmed phthisis.

DCCCCXVII.

In this state of matters, some new indications different from the former may be supposed to arise; and indications for preventing absorption, for preventing the effects of the absorbed matter upon the blood, and for healing the ulcer, have been actually proposed. I cannot find, however, that any of the means proposed for executing these indications, are either probable or have proved effectual. If, upon some occasions, they have appeared to be
useful,

useful, it has been probably by answering some other intention.

While no antidote against the poison which especially operates here, seems to have been as yet found out, it appears to me, that too great a degree of inflammation has a great share in preventing the healing of the ulcer which occurs; and such inflammation is certainly what has a great share in urging on its fatal consequences. The only practice, therefore, which I can venture to propose, is the same in the ulcerated as in the crude state of a tubercle; that is, the employment of means for moderating inflammation, which have been already mentioned (DCCCCIX. *et seq.*).

DCCCCXVIII.

The balsamics, whether natural or artificial, which have been so commonly advised in cases of phthisis, appear to me to have

have been proposed upon no sufficient grounds, and to have proved commonly hurtful. The resinous and acrid substance of myrrh, lately recommended, has not appeared to me to be of any service, and in some cases to have proved hurtful.

DCCCCXIX.

Mercury, so often useful in healing ulcers, has been speciously enough proposed in this disease ; but whether that it be not adapted to the particular nature of the ulcers of the lungs occurring in phthisis, or that it proved hurtful because it cannot have effect, without exciting such an inflammatory state of the whole system, as, in a hectic state, must prove very hurtful, I cannot determine. Upon many trials which I have seen made, it has proved of no service, and commonly has appeared to be manifestly pernicious.

DCCCCXX.

DCCCCXX.

The Peruvian bark has been recommended for several purposes in phthifical cases ; and is said, upon some occasions to have been useful ; but I have seldom found it to be so : and as by its tonic power it increases the phlogistic diathesis of the system, I have frequently found it hurtful. In some cases, where the morning remissions of the fever were considerable, and the noon exacerbations well marked, I have observed the Peruvian bark given in large quantities, with the effect of stopping these exacerbations, and at the same time of relieving the whole of the phthifical symptoms : but in the cases in which I observed this, the fever showed a constant tendency to recur ; and at length the phthifical symptoms also returned, and proved quickly fatal.

DCCCCXXI.

DCCCCXXI.

Acids of all kinds, as antiseptic and refrigerant, are useful in cases of phthisis; but the native acid of vegetables is more useful than the fossil acids, as it can be given in much larger quantities, and may also be given more safely than vinegar, being less liable to excite coughing.

DCCCCXXII.

Though our art can do so little towards the cure of this disease, we must, however, palliate the uneasy symptoms of it as well as we can. The symptoms especially urgent, are the cough and diarrhœa. The cough may be in some measure relieved by demulcents, (DCCCLXXIII.); but the relief obtained by these is imperfect and transitory, and very often the stomach is disturbed by the quantity of oily, mucilaginous, and

and sweet substances, which are on these occasions taken into it.

DCCCCXIII.

The only certain means of relieving the cough, is by employing opiates. These, indeed, certainly increase the phlogistic diathesis of the system; but commonly they do not so much harm in this way, as they do service by quieting the cough, and giving sleep. They are supposed to be hurtful by checking expectoration: but they do it for a short time only; and, after a sound sleep, the expectoration in the morning is more easy than usual. In the advanced state of the disease, opiates seem to increase the sweatings that occur; but they compensate this, by the ease they afford in a disease which cannot be cured.

DCCCCXIV.

DCCCCXXIV.

The diarrhœa which happens in the advanced state of this disease, is to be palliated by moderate astringents, mucilages, and opiates.

Rhubarb, so commonly prescribed in every diarrhœa, and all other purgatives, are extremely pernicious in the colliquative diarrhœa of hectics.

Fresh subacid fruits, supposed to be always laxative, are often, in the diarrhœa of hectics, by their antiseptic quality, very useful.

C H A P. V.

OF THE HEMORRHOIS; OR, OF THE HEMORRHOIDAL SWELLING AND FLUX.

S E C T. I.

Of the P H E N O M E N A *and* C A U S E S *of the*
H E M O R R H O I S.

DCCCXXV.

A DISCHARGE of blood from small tumours on the verge of the anus, is the symptom which generally constitutes the Hemorrhoids; or, as it is vulgarly called, the

the Hemorrhoidal Flux. But a discharge of blood from within the anus, when the blood is of a florid colour, shewing it to have come from no great distance, is also considered as the same disease; and physicians have agreed in making two cases or varieties of it, under the names of External and Internal Hemorrhoids.

DCCCCXXVI.

In both cases it is supposed that the flow of blood is from tumours previously formed, which are named Hemorrhoids, or Piles; and it frequently happens, that the tumours exist without any discharge of blood; in which case, however, they are supposed to be a part of the same disease, and are named Hemorrhoides Cæcæ, or Blind Piles.

DCCCCXXVII.

These tumours, as they appear without the anus, are sometimes separate, round, and prominent, on the verge of the anus ; but frequently the tumour is only one tumid ring, forming, as it were, the anus pushed without the body.

DCCCCXXVIII.

These tumours, and the discharge of blood from them, sometimes come on as an affection purely topical, and without any previous disorder in other parts of the body : but it frequently happens, even before the tumours are formed, and more especially before the blood flows, that various disorders are felt in different parts of the body, as headach, vertigo, stupor, difficulty of breathing, sickness, colic-pains, pain of the back and loins ; and often,

often, together with more or fewer of these symptoms, there occurs a considerable degree of pyrexia.

The coming on of the disease with these symptoms, is usually attended with a sense of fullness, heat, itching, and pain in and about the anus.

Sometimes the disease is preceded by a discharge of ferous matter from the anus: and sometimes this ferous discharge, accompanied with some swelling, seems to be in place of the discharge of blood, and to relieve those disorders of the system which we have mentioned. This ferous discharge, therefore, has been named the Hemorrhoids Alba.

DCCCCXXIX.

In the hemorrhoids, the quantity of blood discharged is different upon different occasions. Sometimes the blood flows only

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upon

upon the person's going to stool; and commonly, in larger or lesser quantity, follows the discharge of the fæces. In other cases, the blood flows without any discharge of fæces; and then, generally, it is after having been preceded by the disorders above-mentioned, when it is also commonly in larger quantity. This discharge of blood is often very considerable; and, by the repetition, it is often so great, as we could hardly suppose the body to bear but with the hazard of life. Indeed, though rarely, it has been so great as to prove suddenly fatal. These considerable discharges occur especially to persons who have been frequently liable to the disease. They often induce great debility; and frequently a leucophlegmatia, or dropsy, which proves fatal.

The tumours and discharges of blood in this disease, often recur at exactly stated periods.

DCCCCXX.

DCCCCXXX.

It often happens, in the decline of life, that the hemorrhoidal flux, formerly frequent, ceases to flow; and, upon that event, it generally happens that the persons are affected with apoplexy or palsy.

DCCCCXXXI.

Sometimes hemorrhoidal tumours are affected with considerable inflammation; which, ending in suppuration, gives occasion to the formation of fistulous ulcers in those parts.

DCCCCXXXII.

The hemorrhoidal tumours have been often considered as varicous tumours, or dilatations of veins; and it is true, that in some cases varicous dilatations have appear-

ed upon dissection. These, however, do not always appear; and I presume it is not the ordinary case, but that the tumours are formed by an effusion of blood into the cellular texture of the intestine near to its extremity. These tumours, especially when recently formed, frequently contain fluid blood; but, after they have remained for some time, they are commonly of a firmer substance.

DCCCCXXXIII.

From a consideration of their causes, to be hereafter mentioned, it is sufficiently probable, that hemorrhoidal tumours are produced by some interruption of the free return of blood from the veins of the lower extremity of the rectum; and it is possible, that a considerable accumulation of blood in these veins, may occasion a rupture of their extremities, and thus produce

duce the hemorrhagy or tumours I have mentioned. But, considering that the hemorrhagy occurring here, is often preceded by pain, inflammation, and a febrile state, as well as by many other symptoms which show a connection between the topical affection and the state of the whole system, it seems probable that the interruption of the venous blood, which we have supposed to take place, operates in the manner explained in DCCLXIX.; and therefore, that the discharge of blood here is commonly from arteries.

DCCCCXXXIV.

Some physicians have been of opinion, that a difference in the nature of the hemorrhoids, and of its effects upon the system, might arise from the difference of the hemorrhoidal vessels from which the blood issued. But it appears to me, that

hardly in any case we can distinguish the vessels from which the blood flows ; and that the frequent inosculations, of both the arteries and veins which belong to the lower extremity of the rectum, will render the effects of the hemorrhagy nearly the same, from whichever of these vessels the blood proceed.

DCCCCXXV.

In DCCLXIX. I have endeavoured to explain the manner in which a certain state of the sanguiferous system might give occasion to an hemorrhoidal flux ; and I have no doubt, that this flux may be produced in that manner. I cannot, however, by any means admit that the disease is so often produced in that manner, or that, on its first appearance, it is so frequently a systematic affection, as the Stahlans have imagined, and would have us to believe. It
occurs

occurs in many persons before the period of life at which the venous plethora takes place ; it happens to females, in whom a venous plethora, determined to the hemorrhoidal vessels, cannot be supposed ; and it happens to both sexes, and to persons of all ages, from causes which do not affect the system, and are manifestly suited to produce a topical affection only.

DCCCCXXXVI.

These causes of a topical affection are, in the first place, the frequent voiding of hard and bulky feces, which, not only by their long stagnation in the rectum, but especially when voided, must press upon the veins of the anus, and interrupt the course of the blood in them. It is for this reason that the disease happens so often to persons of a slow and bound belly.

DCCCCXXXVII.

DCCCCXXXVII.

From the causes just now mentioned, the disease happens especially to persons liable to some degree of a prolapsus ani. Almost every person in voiding fæces has the internal coat of the rectum more or less protruded without the body; and this will be to a greater or lesser degree, according as the hardness and bulk of the fæces occasion a greater or lesser effort or pressure upon the anus. While the gut is thus pushed out, it often happens, that the sphincter ani is contracted before the gut is replaced; and, in consequence thereof, a strong constriction is made, which preventing the fallen-out gut from being replaced, and at the same time preventing the return of blood from it, occasions its being considerably swelled, and its forming a tumid ring round the anus.

DCCCCXXXVIII.

DCCCCXXXVIII.

Upon the sphincter's being a little relaxed, as it is immediately after its strong contraction, the fallen-out portion of the gut is commonly again taken within the body; but, by the frequent repetition of such an accident, the size and fullness of the ring formed by the fallen-out gut, is much increased. It is therefore more slowly and difficultly replaced; and in this consists the chief uneasiness of hemorrhoidal persons.

DCCCCXXXIX.

As the internal edge of the ring mentioned, is necessarily divided by clefts, the whole often assumes the appearance of a number of distinct swellings; and it also frequently happens, that some portions of
it

it more considerably swelled than others, become more protuberant, and form those small tumours more strictly called Hemorrhoids, or Piles.

DCCCCXL.

From considering that the pressure of feces, and other causes interrupting the return of venous blood from the lower extremity of the rectum, may operate a good deal higher up in the gut than that extremity, it may be easily understood that tumours may be formed within the anus; and probably it also happens, that some of the tumours formed without the anus, as in DCCCCXXXIX. may continue when taken within the body, and even be increased by the causes just now mentioned. It is thus that I would explain the production of internal piles, which, on account of their situation and bulk, are not protruded on
the

the person's going to stool, and are often, therefore, more painful. The same internal piles are more especially painful, when affected by the hemorrhagic effort described in DCCXLV. and DCCLXIX.

DCCCCXLI.

The production of piles is particularly illustrated by this, that pregnant women are frequently affected with them. This is to be accounted for, partly from the pressure of the uterus upon the rectum, and partly from the costive habit to which pregnant women are usually liable. I have known many instances of piles occurring for the first time during the state of pregnancy; and there are few women that have born children who are afterwards entirely free from piles. The Stahlians have commonly asserted, that the male sex is more frequently affected with this disease

ease than the female ; but in this country I have constantly found it otherwise.

DCCCXLII.

It is commonly supposed, that the frequent use of purgatives, especially of those of the more acrid kind, and more particularly of aloetics, is apt to produce the hemorrhoidal affection ; and as these purgatives stimulate chiefly the great guts, it seems sufficiently probable that they may excite this disease.

DCCCCXLIH.

I have now mentioned several causes which may produce the hemorrhoidal tumours and flux as a topical affection only ; but must observe farther, that although the disease appears first as a purely topical affection, it may, by frequent repetition, become habitual, and therefore may become

come connected with the whole system, in the manner already explained, with respect to hemorrhagy in general, in DCCXLVIII.

DCCCCXLIV.

The doctrine now referred to, will, it is apprehended, apply very fully to the case of the hemorrhoidal flux ; and will the more readily apply, from the person who has been once affected being much exposed to a renewal of the causes which first occasioned the disease ; and from many persons being much exposed to a congestion in the hemorrhoidal vessels, in consequence of their being often in an erect position of the body, and in an exercise which pushes the blood into the depending vessels, while at the same time the effects of these circumstances are much favoured by the abundance and laxity of the cellular texture about the rectum.

DCCCCXLV.

DCCCCXLV.

It is thus that the hemorrhoidal flux is so often artificially rendered an habitual and systematic affection ; and I am persuaded, that it is this which has given occasion to the Stahlans to consider the disease as almost universally such.

DCCCCXLVI.

It is to be particularly observed here, that when the hemorrhoidal disease has either been originally, or has become, in the manner just now explained, a systematic affection, it then acquires a particular connection with the stomach, so that certain affections there excite the hemorrhoidal disease, and certain states of the hemorrhoidal affection excite disorders of the stomach.

It is perhaps owing to this connection, that the gout sometimes affects the rectum.
See DXXV.

S E C T. II.

Of the CURE of HEMORRHOIDAL AFFECTIONS.

DCCCCXLVII.

ALMOST at all times it has been an opinion amongst physicians, and from them spread amongst the people, that the hemorrhoidal flux is a salutary evacuation, which prevents many diseases that would otherwise have happened ; and that it even contributes to give long life. This opinion, in later times, has been especially

mentained by Dr Stahl, and his followers ; and has had a great deal of influence upon the practice of phyfic in Germany.

DCCCCXLVIII.

The question arifes with refpect to hemorrhagy in general, and indeed it has been extended fo far by the Stahlians. I have accordingly confidered it as a general queftion, (DCCLXVII.—DCCLXXX.), but it has been more efpecially agitated with regard to the difeafe now under our confideration : And as to this, although I am clearly of opinion, that the hemorrhoids may take place in confequence of the general ftate of the fyftem, DCCLXIX. or, what is ftill more frequent, that by repetition it may become connected with that general ftate DCCCCXLIII. and in either cafe cannot be fuppreffed without great caution ; I muft beg leave, notwithstanding
beg

this, to maintain, that the first is a rare case, that generally the disease first appears as an affection purely topical (DCCCCXXXV. DCCCCXLII.), and that the allowing it to become habitual is never proper. It is a nasty disagreeable disease, ready to go to excess, and to be thereby very hurtful, as well as sometimes fatal. At best it is liable to accidents, and thereby to unhappy consequences. I am therefore of opinion, that not only the first approaches of the disease are to be guarded against, but even that when it has taken place for some time, from whatever cause it may have proceeded, the flux is always to be moderated, and the necessity of it, if possible, superseded.

DCCCCXLIX.

Having delivered these general rules, I proceed to mention more particularly, how

the disease is to be treated, according to the different circumstances under which it may appear.

When we can manifestly discern the first appearance of the disease to arise from causes acting upon the part only, the strictest attention should be employed in guarding against the renewal of these causes.

DCCCCL.

One of the most frequent of the remote causes of the hemorrhoidal affection, is a flow and bound belly, (DCCCCXXXVI.): and this is to be constantly obviated by a proper diet, which each individual's own experience must direct ; or, if the management of diet be not effectual, the belly must be kept regular by such medicines as may prove gently laxative, without irritating the rectum. In most cases it will
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be of advantage to acquire a habit with respect to time, and to observe it exactly.

DCCCCLI.

Another cause of hemorrhoids to be especially attended to, is the prolapsus or protrusion of the anus, which is apt to happen on a person's having a stool, (DCCCCXXXVII.) If it shall occur to any considerable degree, and at the same time be not easily and immediately replaced, it most certainly produces piles, or increases them when otherwise produced. Persons therefore liable to this prolapsus, should, upon their having been at stool, take great pains to have the gut immediately replaced, by lying down in a horizontal posture, and pressing gently upon the anus, till the reduction shall be completely obtained.

DCCCCLII.

When the prolapsus of which I speak, is occasioned only by voiding hard and bulky fæces, it should be obviated by the means mentioned in DCCCCL. and may be thereby avoided. But in some persons it is owing to a laxity of the rectum; in which case it is often most considerable upon occasion of a loose stool: and then the disease is to be treated by astringents, as well as by proper artifices for preventing the falling down of the gut.

DCCCCLIII.

These are the means to be employed upon the first approaches of the hemorrhoidal affection; and when from neglect it shall have frequently recurred, and has become in some measure established, they are no less proper. In the latter case, however,
some

some other means are also necessary. It is particularly proper to guard against a plethoric state of the body ; consequently, to avoid a sedentary life, a full diet, and particularly intemperance in the use of strong liquor, which, as I should have observed before, is, in all cases of hemorrhagy, of the greatest influence in increasing the disposition to the disease.

DCCCCLIV.

I need hardly repeat here, that exercise of all kinds must be a chief means of obviating and removing a plethoric state of the body ; but upon occasion of the hemorrhoidal flux immediately approaching, both walking and riding, as increasing the determination of the blood into the hemorrhoidal vessels, are to be avoided: At other times, when no such determination has

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been

been already formed, those modes of exercise may be very properly employed.

DCCCCLV.

Cold bathing is another remedy that may be employed to obviate plethora, and prevent hemorrhagy ; but it is to be used with caution. When the hemorrhoidal flux is approaching, it may be dangerous to turn it suddenly aside by cold bathing: but during the intervals of the disease, this remedy may be employed with advantage ; and in persons liable to a prolapsus ani, the frequent washing of the anus with cold water may be very useful.

DCCCCLVI.

These are the means for preventing the recurrence of the hemorrhoidal flux ; and in all cases, when it is not immediately ap-

approaching, they are to be employed. When it has actually come on, means are to be employed for moderating it as much as possible, by the persons lying in a horizontal position upon a hard bed; by avoiding exercise in an erect posture; by using a cool diet; by avoiding external heat; and by obviating the irritation of hardened fæces by the use of proper laxatives, (DCCCCL.). From what has been said above, as to the being careful not to increase the determination of the blood into the hemorrhoidal vessels, the propriety of these measures must sufficiently appear; and if they were not so generally neglected, many persons would escape the great trouble, and the various bad consequences which so frequently result from this disease.

DCCCCLVII.

With respect to the further cure of this disease, it is almost in two cases only, that hemorrhoidal persons call for the assistance of the physician. The one is when the affection is accompanied with much pain; and of this there are two cases, according as the pain happens to attend the external or the internal piles.

DCCCLVIII.

The pain of the external piles arises especially when a considerable protrusion of the rectum has happened; and when, continuing unreduced, it is strangled by the constriction of the sphincter; while, at the same time, no bleeding happens, to take off the swelling of the protruded portion of the intestine. Sometimes an inflammation supervenes, and greatly aggravates the pain.

pain. To relieve the pain in this case, emollient fomentations and poultices are sometimes of service ; but a more effectual relief is to be obtained by applying leeches to the tumid parts.

DCCCCLIX.

The other case in which hemorrhoidal persons seek assistance, is that of excessive bleeding. Upon the opinion so generally received of this discharge being salutary, and from the observation that upon the discharge occurring persons have sometimes found relief from various disorders, the most part of persons liable to it are ready to let it go too far ; and indeed the Stahlians will not allow it to be a disease, unless when it has actually gone to excess. I am, however, well persuaded, that this flux ought always to be cured as soon as possible.

DCCCCLX.

DCCCCCLX.

When the disease occurs as a purely topical affection, there can be no doubt of the propriety of this rule; and, even when it has occurred as a critical discharge in the case of a particular disease, yet when this disease shall have been entirely cured and removed, the preventing any return of the hemorrhoids seems to be both safe and proper.

DCCCCCLXI.

It is only when the disease arises from a plethoric state of the body, and from a stagnation of blood in the hypochondriac region, or when, though originally topical, the disease, by frequent repetition, has become habitual, and has thereby acquired a connection with the whole system, that any doubt can arise as to the safety of
curing

curing it entirely. Even in these cases, however, I apprehend it will be always proper to moderate the bleeding; lest by its continuance or repetition, the plethoric state of the body, and the particular determination of the blood into the hemorrhoidal vessels, be increased, and the recurrence of the disease, with all its inconveniences and danger, be too much favoured.

DCCCCLXII.

Further, even in the cases stated, (DCCCCLXI.), in so far as the plethoric state of the body, and the tendency to that state, can be obviated and removed, this is always to be diligently attempted; and if it can be executed with success, the flux may be entirely suppressed.

DCCCCLXIII.

DCCCCLXIII.

The Stahlian opinion, that the hemorrhoidal flux is only in excess when it occasions great debility, or a leucophlegmatia, is by no means just; and it appears to me, that the smallest approach towards *producing* either of these, should be considered as an excess, which ought to be prevented from going farther.

DCCCCLXIV.

In all cases therefore of excess, or of any approach towards it, and particularly when the disease depends upon a prolapsus ani (DCCCLI.), I am of opinion that astringents, both internal and external, may be safely and properly employed; not indeed to induce an immediate and total suppression, but to moderate the hemorrhagy, and by degrees to suppress it altogether,

gether, while at the same time measures are taken for removing the necessity of its recurrence.

DCCCCLXV.

When the circumstances (DCCCXLVI.) marking a connection between the hemorrhoidal affection and the state of the stomach occur, the measures necessary are the same as in the case of atonic gout.

THE END OF THE SECOND VOLUME.